WATER RESOURCES

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HEARINGS

BEFORE THE

SELECT COMMITTEE ON NATIONAL WATER RESOURCES

UNITED STATES SENATE

EIGHTY-SIXTH CONGRESS

FIRST SESSION

PURSUANT TO

S. Res. 48

BOISE, IDAHO, OCTOBER 13, 1959

PART 4

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CONTENTS

	Page
Anderson, Ira, Idaho Resources Development Council, for Theodore Hoff, Jr	669
Anderson, Vaughn, chief, engineering and sanitation section, Idaho Department of Public Health	626
Bacon, T. C., president, Idaho Livestock Production Credit Association	681
Benson, Alvin, Owyhee County Planning Commission	672
Bonham, Earl D., chairman, Deer Flat Legume Seed Growers, letter from, to Senator Kerr	681
Bowler, Bruce, Idaho Wildlife Federation	619
Boyer, Edward, chairman, Fort Hall Business Council, Shoshone-Bannock Tribes	623
Brandt, John, Nampa Chamber of Commerce	664
Carson, William, Weiser, Idaho, for Blaine Stubblefield	590
Carter, George, State reclamation engineer for Governor Smylie	554
Charts:	
Boise trade area	552
Fort Hall Indian Reservation	
General map	faces 552
Snake River Basin	faces 552
State of Idaho	faces 558
Chinook salmon habitat	573
Clearwater River drainage	576
Salmon River drainage	575
Sport fishing areas	572
Steelhead trout habitat	574
Church, Hon. Frank, U.S. Senator from the State of Idaho	546
Committee of Nine, Leonard Graham	684
Cooper, Fred, president, Idaho State Reclamation Association	559
Crookham, G. L., Jr., member of the Idaho State Legislature	582
Dorman, Darrell H., president, Idaho State AFL–CIO	679
Dworshak, Hon. Henry, U.S. Senator from the State of Idaho	546
Fredericksen, Don, Idaho Association of Soil Conservation Districts	649
George, John M., Idaho director, National Rural Electric Cooperative Association	682
Glasby, John D., president, Mountain Home Chamber of Commerce	648
Gossett, Charles, Nampa, Idaho	652
Hoff, Theodore, Jr., president, Idaho Resource Development Council, Boise, Idaho	669
Hutchison, John, 3–C Water District	665
Idaho Water Resources Conference with accompanying topics	605
Kueneman, Ray W., Idaho State Chamber of Commerce and others	602
Leonard, Ross, director, Idaho Department of Fish and Game	565
Lyda, Tom, letter from, to Senator Kerr	681
Nelson, H. T., regional director, Region 1, U.S. Bureau of Reclamation	672
Noh, Harry, president, board of directors, Salmon River Canal Co., Hollister, Idaho	666
Poole, John T., Flood Control District No. 1, Idaho, Heise-Roberts section	639
Roach, Tom, president, Idaho Power Co	594
Sanborn, John, Idaho Farm Bureau Federation	578
Smylie, Hon. Robert E., Governor of the State of Idaho	554
Stein, Wanek, president, Boise Chamber of Commerce	548
Stubblefield, Blaine, Weiser Chamber of Commerce	591

	Page
Teske, A. J., secretary, Idaho Mining Association	585
Walker, Mrs. John V., president, Idaho League of Women Voters	632
Washington Water Power Co	601
Water District No. 36, Committee of Nine	684
Weeks, Leon L., secretary, Idaho Cattlemen's Association	680
Wetherell, R. M., State Senator from Elmore County, Idaho	634
Weyerhaeuser Co., Tacoma, Wash	677
Wilson, Asher B., Twin Falls, Idaho	657
Wilson, Wilbur F., president, Idaho Wool Growers' Association	680

WATER RESOURCES

TUESDAY, OCTOBER 13, 1959

U. S. SENATE,
SELECT COMMITTEE ON NATIONAL WATER RESOURCES,
Boise, Idaho.

The select committee met at 9 a.m., pursuant to call, in the courtroom, U.S. Post Office and Courthouse, Boise, Idaho, Senator Robert S. Kerr (chairman) presiding.

Present: Senators Kerr, Church, Young, and Dworshak.

Present also: Theodore M. Schad, staff director of the select commitee and Paul McBride, chief clerk.

The CHAIRMAN. I am glad to have the opportunity to have this hearing of the Senate Select Committee on National Water Resources in Boise, the capital of the great State of Idaho, at the request of your distinguished U.S. Senators.

I am delighted that your senior Senator, Henry Dworshak, and your junior Senator, Frank Church, are here to give us their statements and to present their witnesses for this committee to hear.

This committee is a little different from the regular standing committees of the U.S. Senate. I would like to tell you a little about its formation.

It was established by Senate Resolution 48 in the 1st session of the 86th Congress last April 20. Its membership was taken from the four standing committees of the Senate which have primary responsibility in the field of water resource development and conservation: Public Works, Interior and Insular Affairs, Interstate and Foreign Commerce, and Agriculture and Forestry. It has 17 members, all but 4 of whom are from the 17 Western States. Our membership includes the chairmen of the four standing committees which I have just named.

It is a temporary committee. It will make its study, formulate its report, file its recommendations, and will cease to exist on January 31, 1961.

Technical experts and forecasters in the Census Bureau tell us that the Nation's population of 178 million today will be double before the year 2000. Economic experts forecast that the Nation's gross national product, which now reaches almost $500 billion per year, will double at an even earlier date.

This tremendous growth will only be possible if we make plans now for the intelligent and effective use of our natural resources, the most controlling of which is water. The industrial development of the future will be in the areas which have available usable water, a source of low cost energy fuel, and an alert, aggressive population to make the best use of these resources.

It is our hope that out of the committee's hearings, deliberations, and investigations will come a blue print stage, showing where additional water resources are available, how additional uses of water to increase its value may be developed, what the needs of the Nation and its people will be in the decades immediately ahead, and how and where those needs can best be met.

I want to express my deep appreciation to both of your Senators. They are two of the most able men in the U.S. Senate. I have had the privilege of working with both of them on committees of which I have been or am a member. Their work has been characterized by diligent purpose to further the advancement and progress of their State of Idaho.

It is the custom of this committee, which will be followed here, to call on them for any statement that they care to make and then to ask your senior Senator to present the witnesses to be heard by the committee.

I call on Senator Dworshak first.

STATEMENT OF HON. HENRY DWORSHAK, U.S. SENATOR FROM THE STATE OF IDAHO

Senator DWORSHAK. Thank you, Mr. Chairman.

First, may I express my sincere appreciation to you and Senator Young, to the committee and to the staff for arranging this hearing in Idaho.

I realize that time will be limited today, but I am hopeful that the representative group we have here to testify will prove that Idaho has one of the outstanding water resource backgrounds of any State in the Union. I think that no State can surpass ours and in view of that unusual situation I can assure you that this hearing has a profound bearing upon the thinking of our people and I am sure that the committee will take away very vital and important information dealing with water resources of our State.

The CHAIRMAN. Senator Church.

STATEMENT OF HON. FRANK CHURCH, U.S. SENATOR FROM THE STATE OF IDAHO

Senator CHURCH. Mr. Chairman, I want to join with my colleague, Senator Dworshak, in extending a cordial welcome to you both.

When this committee was established by resolution it was meant to serve two objectives. There may be other objectives that it will serve, but certainly primary among those that the committee is intended to serve are these two objectives:

First, to investigate thoroughly the water resources of our country and measure them against our future needs. It is in pursuit of this objective that the committee is meeting today. From the outset it has been our concept that in pursuing this inquiry that this committee will seek also to place the general interest above any particular or special interest.

Common experience, of course, makes it plain that each of us tends to view our public water resources from the perspective of his own particular interest. It is not unlike the legendary story of the blind

men who went together to feel the elephant that they had never seen and one felt the trunk and one felt the leg, and one felt the tusk, and one felt the tail, and each one came away with a different impression of what the elephant was like.

So it is with all of us who view our water resources from the standpoint of our particular interest or business involvement.

We want to have the benefit of all of these perspectives. But the committee has a responsibility of drawing from all of this testimony a picture that places the general interest first.

The second objective of this committee is to project the data that we are able to accumulate in these series of hearings forward in such a way as to make for intelligent long-term planning. There has been a time in this country when planning was thought to be a kind of ugly word. But I think that the growth of this country and population and industry that we know is ahead and the limited water resources that we have to utilize make it plain that in the interest of our children and grandchildren we should plan intelligently for the comprehensive development of our water resources in the general interest.

These are the objectives of the committee, Mr. Chairman. They certainly are objectives that are close to the hearts of all people who are westerners and who know the importance of water resources.

I will only close by saying that I think that we are very fortunate to have both in our chairman here, Senator Kerr, and Senator Young; two men who are respected for their knowledge about water resources; two of the outstanding authorities on this question.

We are pleased that they have come to Idaho to take the time to inquire into our particular problems here and I want to join with Senator Dworshak in extending you a most cordial welcome.

The CHAIRMAN. Thank you very much, Senator Church.

I would like to say this before Senator Dworshak calls his witnesses.

In view of the slight indication from your two Senators that Idaho might be the No. 1 State in the Union, and because silence on his part might in some quarters be interpreted as either acquiescence or agreement, I think it would be entirely in order for one of the noble Members of the U.S. Senate, who has long, as Senator Church told you, been an authority and an advocate of water resources, especially in the West, my great friend and colleague, the Senator from North Dakota, Senator Milton Young, to say just a word if he cares to.

Senator YOUNG. Thank you, Mr. Chairman. I only have a word or two to say.

It is a real pleasure to be out here. I have heard about Idaho and its water resources and all its assets for many, many years, and all these proposed changes, including Bruce's Eddy, and I hope one day to be able to be of some help to you in securing that project and some others.

Thank you.

The CHAIRMAN. Senator Dworshak, would you call your witness?

Senator DWORSHAK. Mr. Chairman, the list of witnesses has been prepared with consideration for getting as representative a presentation as possible.

Gov. Robert Smylie was scheduled to make the initial statement but because he had to leave rather hurriedly yesterday morning for Los Angeles on a business trip, Mr. Wanek Stein, president of the Boise Chamber of Commerce will make the first statement.

I might add this, also, for the benefit of those present. I beseech your cooperation in conserving time to the best possible advantage. I think if there are any very long statements that can be given, in part, orally, and the balance included in the printed record, it will help us to have you do so. I want the chairman to conduct this hearing in a manner that is consistent with procedures which have been followed elsewhere and I am sure he will do that with complete fairness to all of the witnesses.

Mr. Stein.

The CHAIRMAN. Come around there and sit down by that loudspeaker and be just as much at ease as if you were the Governor.

STATEMENT OF WANEK STEIN, PRESIDENT, BOISE CHAMBER OF COMMERCE

Mr. STEIN. Thank you.

The CHAIRMAN. I will tell you, you rate pretty high in my book. You took me all over town and fed me, and asked embarrassing questions about Oklahoma football, but I will remember the courtesy long after the wound in my feeling of what you said about that has been healed and forgotten.

Mr. STEIN. I know that you heal fast, Senator.

It is a pleasure to welcome you gentlemen here in Idaho.

Could we have a prepared statement from the Boise Chamber of Commerce which has been submitted and which I won't read entered in the record? I will just attempt to cover a few of the highlights in it.

(The prepared statement referred to follows:)

STATEMENT OF WANEK STEIN, PRESIDENT, BOISE CHAMBER OF COMMERCE

It is the purpose of the Boise Chamber of Commerce in this brief report to point out and bring to the attention of the committee the very valuable water resources of this area. This is in line with the committee's purposeful study of the matter of development and coordination of such water resources. It is our understanding that a specific point is being made of the rapid increase in population and the question of the ability of the Nation's water resources to sustain the continued economic growth necessary for our Nation's strength. its people's high standard of living and its competitive place among the nations.

Announcements concerning this hearing indicate that this is a long-range study to be completed in 1960 but to project the water resource needs and development at least through the year 1980. With these purposes and considerations in mind it is worthwhile to restate briefly some of the principles and conditions which will contribute to such wholesome and beneficial development for the Nation as well as the local communities.

1. The development of storage reservoirs and reclamation projects on the upstream areas not only add to the irrigation agricultural development of the immediate areas but improve measurably the regularity of stream runoff for flood control, power, downstream navigation, recreational use, and propagation of fish and wildlife. Proper support should be given to the Bureau of Reclamation and the Army engineers, forestry, and soil conservation, in their separate and coomperative programs to continue the upstream developments.

2. The rights to water and its use, in Idaho, are properly and adequately controlled and regulated by the constitution and laws of the State of Idaho. All Federal laws bearing on this subject should be made subject to State laws and regulations.

3. Development of these reclamation projects in the West and in Idaho in particular are wealth producing, job producing, and tax producing for the people of the country and for every level of government. Also these reclamation projects are built under contract with the various irrigation districts and pay for themselves.

4. The principle of compacts between the States should be followed to insure the fullest and most beneficial multipurpose use of all of the water resources of the Snake River.

5. The principle of water exchanges wherever necessary and reasonable and greatest possible multiuse of water resources for the benefit of the State, the Nation, and the people, should be followed. This would be consistent with preservation of original water rights in order of priority.

6. In light of the long-range purpose of your committee it is important to point out that the needs for 1980 and beyond must certainly take into consideration the fact that many lands in Idaho and elsewhere are being taken out of agriculture and being put to other uses: For industry, residential growth of cities and suburbs, and other uses. Therefore, new agricultural lands will be constantly needed.

The area that the Boise Chamber of Commerce is mostly concerned with is its present trade area (see app. I). In terms of water darinage area, this would include the Snake River drainage from Milner Dam on the upper Snake River to Weiser, Idaho.

There are now some 1,220,000 acres under irrigation in this area. Approximately 960,000 acres of this total are located in the State of Idaho. The balance is across the Snake River in Oregon. About 850,000 acres of the lands lying in Idaho are irrigated from surface water of the Snake River, its tributaries, and ground water, and the balance of area is served by the surface waters of nontributary streams.

To serve these lands on both sides of the Snake River, we now have about 4⅔ million acre-feet of storage, of which 3.9 million acre-feet is active. Many of the existing water control facilities are multiple purpose in character, serving the principal functions of irrigation, power, flood control, and a variety of other beneficial functions.

The average flow of the Snake River at Weiser, adjusted to reflect the present stage of development, is 11,700,000 acre-feet. It has been calculated that for the future irrigation development in Idaho of lands lying between Milner Dam and Weiser, there are available some 8 million acre-feet on an average, annualy, in the Snake, Boise, and Payette Rivers.

This average anual water supply of 8 million acre-feet is a tremendous undeveloped resource. At an anual diversion rate of approximately 5 acre-feet per acre irrigated, water supply would provide for the development of an additional 1.6 million acres in the Boise trade area. (See app. II.)

There are nearly 900,000 acres of presently arid lands which could be brought into highly productive irrigated agriculture. An additional 270,000 acres are in need of supplemental water supplies to assure good crops each year. About 5,000 acres of the new land potential, and 120,000 acres of the lands needing additional water supplies are located in Oregon. The major portion, thus, lies in Idaho.

From these figures, a water supply of 8 million acre-feet annually in an average year, and over a million acres needing either full or suppdemental water supplies—we can honestly look forward to tremendous future development.

Immediately south of the irrigated lands of the Boise Valley lies the vast Mountain Home Desert. This arid area represents one of the largest blocks of land susceptible to future irrigation remaining in the United States. For over half a century, plans for the development of this area have been proposed and discussed. The Bureau of Reclamation is making studies of potential development in this area, and in the very near future, we expect a report on their studies. Known locally as the Guffey development, would irrigate some 119,000 acres of presently dry lands, and provide a replacement supply or supplemental supply to 12,500 acres. Also involved in the proposed plan would be three powerplants with an installed capacity of some 140,000 kilowatts. This proposal is strongly supported by a broad section of the people in this area.

Under the Guffey Plan, Snake River water would be pumped from a reservoir at the Guffey site near Melba, Idaho, to serve new lands in the Mountain Home area and also to provide an exchange supply of water to the Boise project for water diverted from the Boise River below Anderson Ranch Dam to new lands in the Mountain Home area. (See app. III.)

The Guffey development would add over 1,200 new farms to this area, as well as an estimated increase in the gross annual farm production of about $15 million. It is recognized that agreements with the Boise Valley irrigators of the key water exchange arrangement are fundamental to the development of the project. This will require the most sincere and cooperative efforts of everyone concerned.

Also, in the Mountain Home area, there are an additional 82,000 acres lying southwest of Boise above the New York Canal to the Swan Falls area above the Snake River (see appendix), for which a water supply has been identified in the Snake River and nearby tributaries. In the even more distant future, another 250,000 acres, which embrace the balance of potential irrigable land in the Mountain Home area, could be developed.

Across the Snake River, and somewhat upstream, is another vast block of potentially irrigable land. This is the Bruneau area. From the Salmon Falls Creek to the Bruneau River on the south side of Snake River, there are some 187,000 acres which could be served by pumping from Snake River. This includes the proposed 66,000-acre Crystal Springs development by private capital, located on the south side of Snake River, in the Glenns Ferry-Hammett area.

On the west side of the Bruneau River, there are about another 40,000 acres which could possibly be served by pumping from the C. J. Strike Reservoir. And in the long range future, there are possibly another 200,000 acres in the Bruneau area which could be developed when the water supplies for such development can be identified.

The Owyhee project with 118,000 irrigated acres, of which 40,000 acres are in Idaho, needs supplemental water supplies. The Owyhee River, above the existing Owyhee Dam, could provide multiple purpose benefits in addition to supplying the needed supplemental water. The site which appears best suited for this additional storage is the Duncan Ferry site near the town of Jordan Valley.

In the Payette River drainage, the greatest opportunity for additional development lies in the development of the Garden Valley facilities. The Bureau of Reclamation has proposed a 2,400,000-acre-foot reservoir at the Garden Valley site on the South Fork of the Payette River, together with reregulating facilities downstream and diversion structures on the North Fork, including an installed hydroelectric capacity of some 368,500 kilowatts ultimately. The construction of the Garden Valley project was recommended in the recent "308" Review Report of the Army Corps of Engineers. The project would provide important irrigation, flood control storage, at site and downstream power benefits, and fish and wildlife and recreation benefits.

In the Payette River drainage, there are some 50,000 acres of presently dry lands which could be brought under irrigated agriculture through development of the Garden Valley facilities. There are also over 30,000 acres in the drainage, which, although presently irrigated, do need additional water which could be supplied through the development of these facilities.

In the Weiser River Basin, there are some 18,000 acres which could be brought under irrigated agriculture. In addition, 12,000 acres in this area which are now irrigated, need additional water. Legislation is already pending in the Congress to authorize the 5,000-acre Mann Creek project, involving construction of the 13,000-acre-foot Spangler Reservoir on Mann Creek.

The area adjacent to the Snake River and its tributaries below Milner Dam is not only dependent upon the water for irrigation of the arid land, but is also dependent upon the water to generate all of the power that is used at the present time. The Idaho Power Co. adequately supplies all of the commercial power requirements of the area from its hydroelectric system, which will shortly have a total peaking capability of 1,355,000 kilowatts from existing plants and those building or to be built under its FPC license. The Idaho Power Co. and the Bureau of Reclamation have consistently cooperated in the development of water resources for irrigation and power to obtain the maximum use of water for irrigation and the maximum revenue from by-product power.

On the main stem of the Snake River, from elevation 1,475 (Hells Canyon) to the toe of the Milner Diversion Dam, the river drops 2,625 feet. The Idaho Power Co.'s plants utilize approximately 1,300 feet of this fall. However, there remains only about 220 feet of river fall, which appears to be economically feasible for power development. The remaining 1,100 feet of fall does not appear feasible for power development because of geological and streamflow conditions. Therefore, it is anticipated that the principal source of the area's commercial power requirements, after about 1975 or 1980, will be from thermal or nuclear electric generating plants.

A limited amount of by-product power is contemplated from the proposed Guffey irrigation project with 130,000 acres of irrigated land, and from the proposed Garden Valley project which will irrigate 125,000 acres of arid land. A major part of the power from these two projects will be required to operate the project pumps, and any remaining by-product power will ultimately be required for lands not specifically associated with these two projects.

The development of water resources for the future must also take into consideration that the multipurpose uses must go hand in hand as the irrigation and power development has in the past. Flood control and pollution from floods has long been a major and disastrous problem for downstream areas. Effective control is being improved by upstream watershed management, water storage facilities and irrigation development. In turn, these water reservoirs and the returned flow from irrigation developed create a steady year-round flow of water for downstream navigation power and for the maintenance of fish. The reservoirs also provide recreation facilities for boating, fishing, and other water sports.

The Boise Chamber of Commerce, in submitting this report, feels the need for the utilization of the natural resources consisting of water and land. We also realize that this land and water must be utilized for food supplies for our population growth in the next 20 years.

Statisticians state that our population by 1980, only 20 years off, will be over 250 million people. They also state that in that period of time, approximately 20 million food-producing acres will be removed from production, due to soil depletion, urban and commercial development. With this estimated 20 million acres lost for food production, we feel that in the best interest of the American people, the land should be developed as quickly as possible.

We would like to point out that our Government has spent a tremendous amount of money in the interest of national defense and self-preservation. We feel that some interest should be shown to the establishment of adequate land for food production for our national defense. If the projects mentioned in this report were started tomorrow, it would probably be 20 years before all of this land would be available for food production. Consequently, taking into consideration the tremendous growth in our population, plus foresight in providing food for this population, we could insure adequate food supplies in event of a war, as well as safeguard against the possibility of some unforeseen severe drought. We feel immediate consideration should be given to the development of this tremendous and extremely important natural resource.

In summing up, we urge the earliest possible development of the water resources and land in this area for the following reasons:

(1) The approximate 1 million acres per year that is taken out of production.

(2) The tremendous population increase predicted in the next 20 years.

(3) Adequate food production in the event of any national emergency.

(4) Benefits through flood prevention, plus downstream navigation, recreation, and preservation of wildlife.

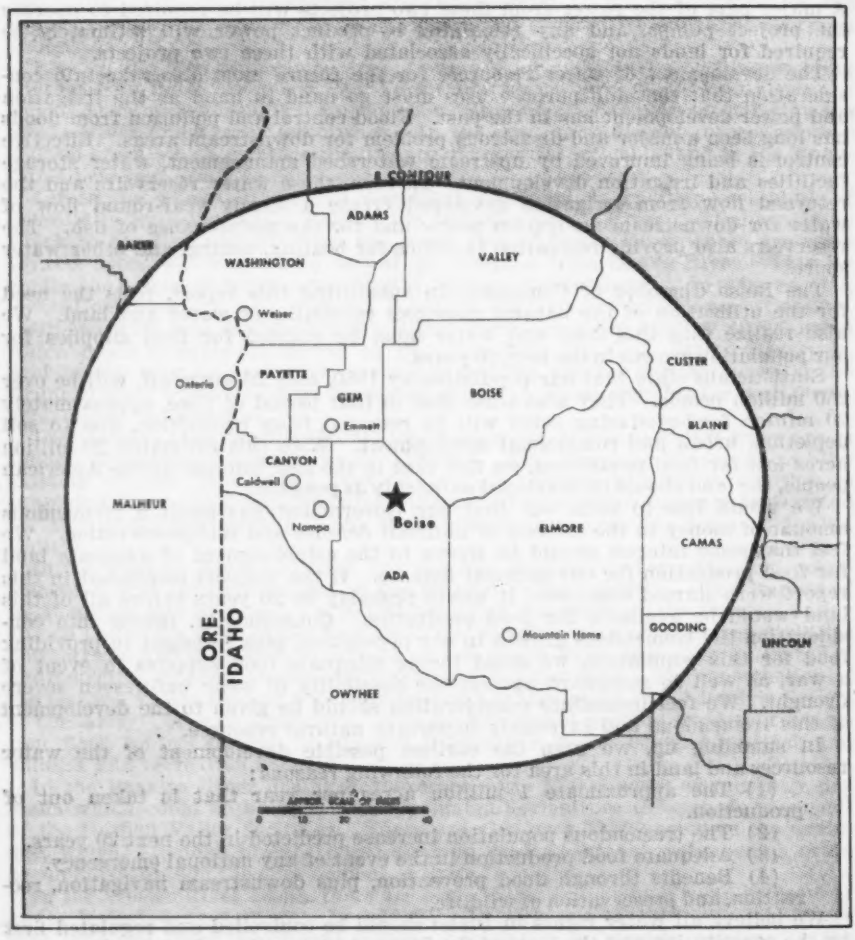
We believe all water rights in Idaho should be controlled and regulated first by the constitution and the laws of the State of Idaho; the principle of compacts between the States should be followed; the principles of water exchanges wherever reasonable and possible should be recommended.

We commend the Bureau of Reclamation and the Army Engineers for their fine planning for the future and recommend their continuing efforts.

We also wish to thank the committee for appearing and giving us the opportunity of presenting our report regarding the tremendous land and water resources awaiting development in this area.

APPENDIX I.—DISTRIBUTION

Boise Trade Area

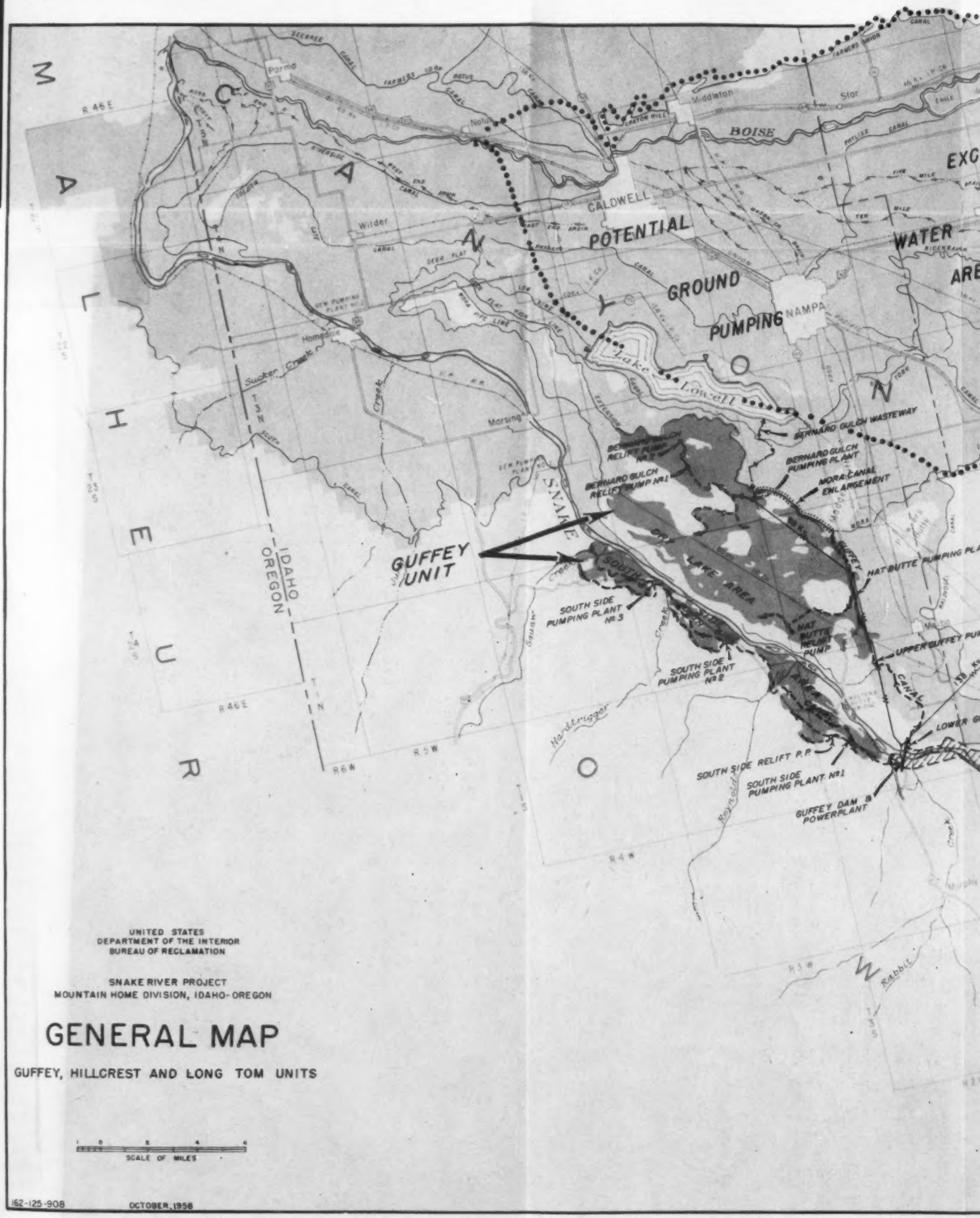


Mr. STEIN. Our area that we cover in our report will be a distance of approximately 300 miles which will be from Milner Dam, which is about in the middle of that map there, which is approximately 200 miles from Boise and go over to around Ontario and Payette, which is approximately 100 miles west of Boise or a distance of 300 miles.

In this area at the present time there is approximately 1,200,000 acres of irrigated land. Our report will attempt to prove, and we feel that it does prove that there is a substantial amount of additional land in that area that can be utilized for food for consumption. That additional land available is approximately 1,600,000 acres.

Our report will also show that there is available more than adequate water in the hills backing this land up to serve this 1,600,000 acres.

So this would create an area approximately 125 percent larger than is now producing food.



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

SNAKE RIVER PROJECT
MOUNTAIN HOME DIVISION, IDAHO-OREGON

GENERAL MAP

GUFFEY, HILLCREST AND LONG TOM UNITS

SCALE OF MILES

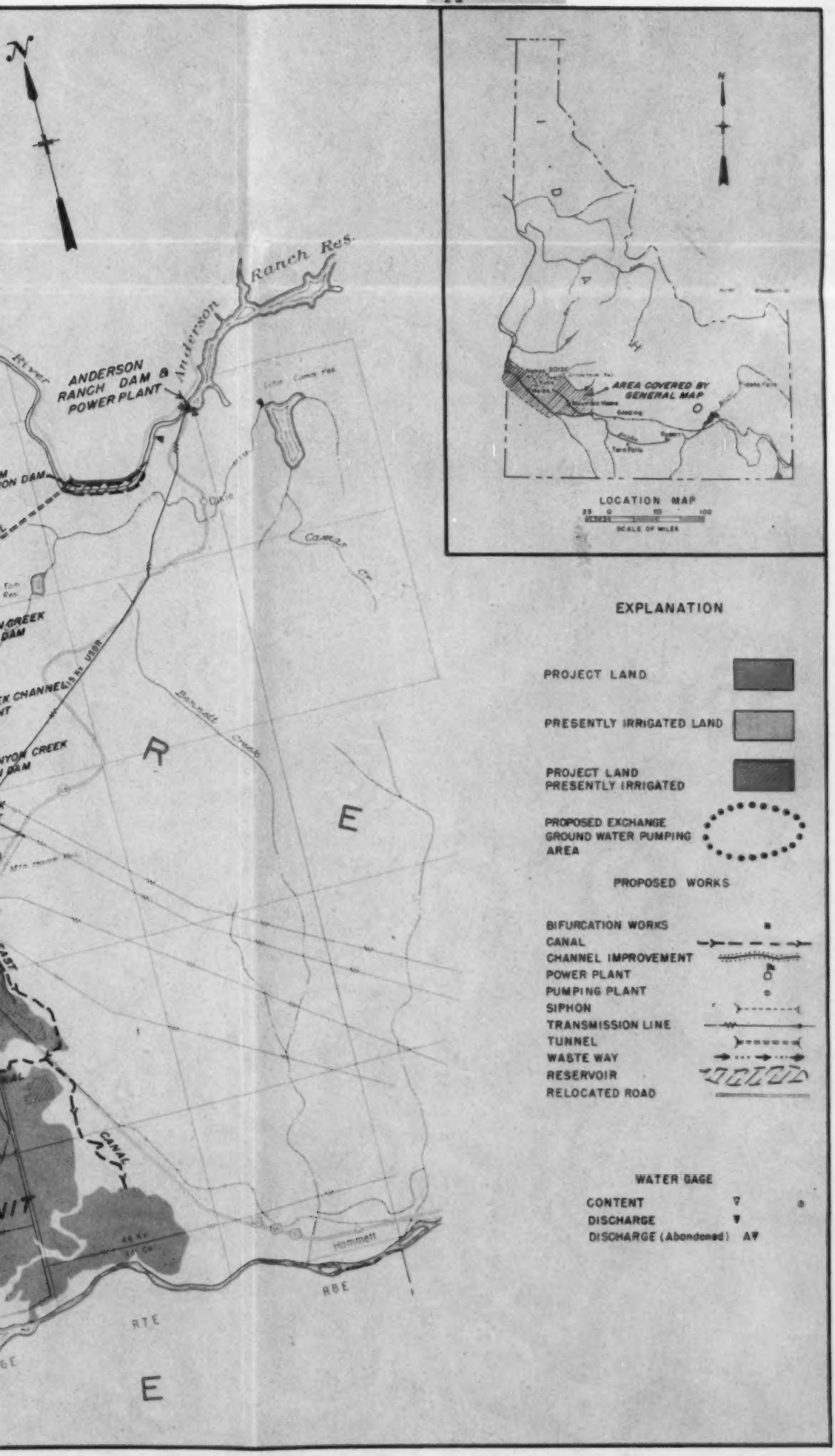
162-125-908 OCTOBER, 1958

48186 O-60-pt. 4 (Face p. 552) No. 1

RIVER
BOISE
Garden City
Meridian
Eagle
Kuna
Indian Creek
Mile
HILLCREST UNIT
HILLCREST PUMPING PLANT
BOISE RIVER DIVERSION DAM
LUCKY PEAK DAM
LUCKY PEAK POWER PLANT
Lucky Peak Res.
ARROWROCK DAM
South Fork
CANAL
WEST HIGHLINE CANAL
LONG TOM UNIT
Orchard
EAST LAKE
WEST LAKE
WILDLIFE DEVELOPMENT AREA
CANYON CREEK POWER CANAL
CANYON CREEK WASTE WAY
GUFFEY PUMPING PLANT
SWAN FALLS DAM AND POWER PLANT
GUFFEY RESERVOIR
Sinker Creek
Foggie
Owyhee
ADA
ELMORE
CENTRAL
R1E
R2E
R3E
R4E
R5E

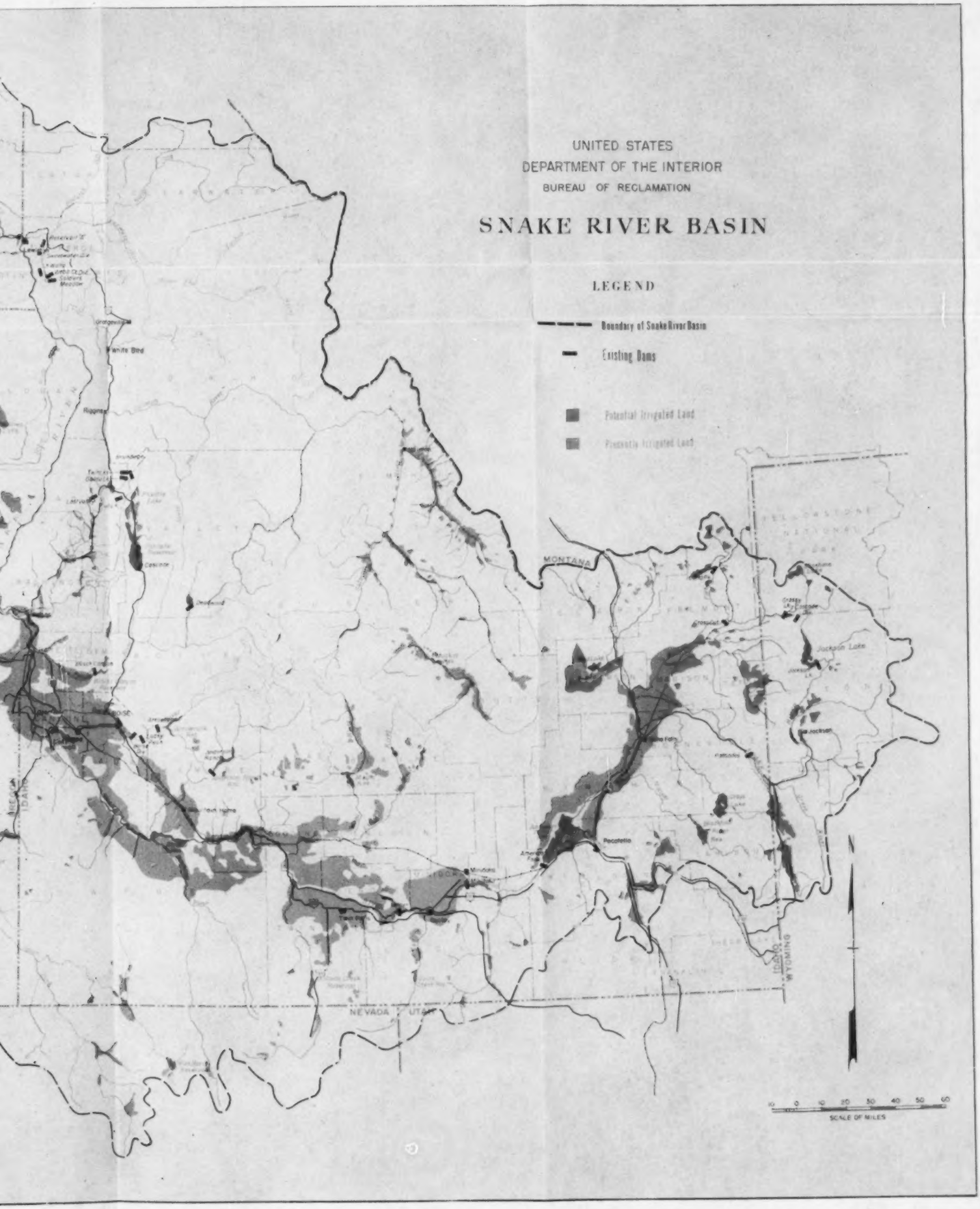
ARROWROCK DAM
Arrowrock Res.
South Fork
Boise
LUCKY PEAK DAM
Lucky Peak Res.
LUCKY PEAK POWER PLANT
ELMORE
LONG TOM DIVERSION DA
LONG TOM TUNNEL
WEST HIGHLINE CANAL
UPPER CANYON CREE DIVERSION DAM
CANYON CREEK CHA IMPROVEMENT
CANYON CREEK POWER CANAL
LOWER CANYON DIVERSION DAM
CANYON CREEK POWER PLANT
CANYON CRE WASTE WAY
Orchard
WEST LATERAL
LONG TOM UNIT
WEST CANAL
EAST LATERAL
WEST LATERAL
Squaw Creek
WILDLIFE DEVELOMENT AREA
CENTRAL CANAL
MOUNTAIN HOME AIR BASE
LONG TOM UNIT
Canyon Creek
Grandview
C.J. STRIKE DAM & POWER PLANT
R2E
R3E
R4E
R5E
R6E
H
E

Appendix II


N
Anderson Ranch Res.
ANDERSON RANCH DAM & POWER PLANT
Anderson
Little Camas Res.
Camas Cr.
Bennett Creek
R
E
CANAL
Hammett
RBE
RTE
AREA COVERED BY GENERAL MAP
LOCATION MAP
SCALE OF MILES
EXPLANATION
PROJECT LAND
PRESENTLY IRRIGATED LAND
PROJECT LAND PRESENTLY IRRIGATED
PROPOSED EXCHANGE GROUND WATER PUMPING AREA
PROPOSED WORKS
BIFURCATION WORKS
CANAL
CHANNEL IMPROVEMENT
POWER PLANT
PUMPING PLANT
SIPHON
TRANSMISSION LINE
TUNNEL
WASTE WAY
RESERVOIR
RELOCATED ROAD
WATER GAGE
CONTENT
DISCHARGE
DISCHARGE (Abandoned)

LOCATION MAP

48186 O - 60 - pt. 4 (Face p. 522) No. 2


UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SNAKE RIVER BASIN
LEGEND
Boundary of Snake River Basin
Existing Dams
Potential Irrigated Land
Presently Irrigated Land
MONTANA
NEVADA
UTAH
WYOMING
Jackson Lake
Pocatello
White Bird
SCALE OF MILES

Our report also goes into the reasons why this land should be developed. Senator Kerr, you touched on this a little earlier in your opening statement. Our report does not go for the next 40 years but is merely for the next 20 years. In that period of time statistics tell us that the population will be 250 million in the United States by 1980. So we have tried to tie our report in for the next 20 years, which I understand that your study is to cover.

The thing we want to particularly point out is we are also informed that approximately 1 million acres of food-producing ground is being removed each year by urban and commercial development. Consequently, in this 20-year period up to 1980, we will have removed at least 20 million acres of food-producing soil for commercial and urban expansion. So we have a pinch there of an expanding population, because of an expanding population the food-producing ground is continually being removed. So our report shows that we feel that the tremendous resources in this area, 1,600,000 acres, should be utilized just as quickly as possible.

If the projects that are on the planning board and ready to go were to start tomorrow morning this land would not be developed and in use in its entirety within the next 20 years. Consequently, we urge that in this report that all haste be used in the development of this land because it cannot be a crash program. It takes time.

Our report will also show that the irrigation projects are practically all self-liquidating. They are accomplished without any expense to the Government because the money is returned over a period of time. Of course they create additional taxpayers. If this project was completed, the utilization of this 1,600,000 acres, we would have an additional 300,000 to 400,000 taxpayers in this area paying Federal, State and local taxes.

Our report also goes into the preservation of water rights which our committee feels should be continued by the States and these are cherished possessions of land owners in this area.

Our report also goes into the preservation of water rights which our that they should be followed at all times.

We also believe in the principles of water exchanges wherever reasonable and possible.

Of course there are additional benefits which will be brought out for the irrigation projects such as flood control, downstream navigation, recreation, and preservation of wildlife.

Incidentally, Senator Kerr, I have some figures here that kind of came up last night and I thought I would give them to this committee.

There are approximately 34 million acre-feet of water entering Idaho. Leaving Idaho there is approximately 69 million acre-feet. I think that that record will show that there is a tremendous national resource that is not being utilized to its fullest.

It has been a pleasure to have an opportunity to present this brief on behalf of the Boise Chamber of Commerce and we have every hope that the tremendous land and water resources of this area will be utilized at the fullest within the quickest possible time.

Thank you very much.

The CHAIRMAN. Thank you, Mr. Stein.

Senator DWORSHAK. The next witness is George Carter, State Reclamation Engineer, who will present an outline of physical water resources with a description of State supplies and present development.

STATEMENT OF GEORGE CARTER, STATE RECLAMATION ENGINEER

Mr. CARTER. Gentlemen of the committee, I think it is well understood that Governor Smylie was compelled to be out of the State. I understand he has written a letter of regret to Senator Kerr, and I suggest that that letter might be put in the record.

(The letter referred to follows:)

STATE OF IDAHO,
OFFICE OF THE GOVERNOR,
Boise, October 12, 1959.

Hon. ROBERT KERR,
Chairman, Select Committee on National Water Resources,
U.S. Senate, Washington, D.C.

DEAR SENATOR: A longstanding commitment in California prevents my personal attendance at your hearings tomorrow. I deeply regret that I was unable to change my schedule after I knew of your committee's plans.

In order to give the committee my views I have prepared a statement, a copy of which is attached, which will be read for me by the Honorable George Carter, Idaho State reclamation engineer. Mr. Carter will file adequate copies with the clerk.

Permit me to welcome you and your associates to Idaho and to Boise. If we may be of service in any way, please let my staff know.

With kind regard, I am,

Sincerely yours,

ROBERT E. SMYLIE, *Governor.*

Mr. CARTER. Governor Smylie did not tell me exactly what his mission was in California but I suspect he may be going down there telling those people about a State that has lots of water and it might be worth looking at Idaho.

Now, with your permission I should like to read all of the Governor's statement. I think it is so good that I shouldn't skip any of it.

The CHAIRMAN. Very well.

Mr. CARTER (reading):

As Governor it is a pleasure to welcome you to Boise and to Idaho. I am especially pleased that Senator Kerr has made time available for Idahoans to give their views with respect to the important problem of properly evaluating the use and conservation of our national water rsource.

No subject is as important to the West, or for that matter to the Nation, and I am most pleased to salute your chairman's foresight in undertaking this most important and far-reaching study.

As will appear more fully later in this statement, Idaho is in a remarkably fortunate position with respect to water supply. It has been, and will continue to be, a prime objective of the Idaho State government, to protect this water resource and insist on its wise and efficient use. It is the State's most important asset in the developing economic contest that will attend the inevitable growth of the West.

I have asked the State reclamation engineer to prepare a map which will delineate for the committee the major river systems of the State, the location of existing and planned reclamation, power, and flood control projects and the areas in which the major ground water developments are being planned and carried forward.

As soon as I have finished the statement I will attempt to sketch for you on this map the location of these various developments.

It is my understanding that you do not desire to have specific projects discussed at length in this hearing and for that reason I shall not discuss in detail the immediately interesting proposals which have had consideration in the Congress and in the administrative offices of the Government of the United States.

I should say that we have several projects which have the support of many of our people and the formally stated support of the Government of the State

of Idaho. These are the Bruces Eddy project on the Clearwater, the Burns Creek project on the South Fork of the Snake, the Mountain Home reclamation project and the navigation and power dam projects on the lower Snake River in Washington which would provide water navigation facilities to Lime Point above Lewiston, Idaho.

Now permit me to discuss the water resources of Idaho and their utilization in broader terms.

Idaho as a State government has not, through money appropriations, engaged in the development or utilization of water resources. It has, however, for 70 years lent its encouragement through legislation to water resource development, principally for irrigation use. It has attempted and succeeded to an admirable degree in enacting water laws directed toward equally safeguarding the individual, the corporation, and the municipal corporation, small or large, who is involved in developing and utilizing water.

Notable in Idaho's legislation directed to this end was its acceptance in 1895 of the Federal Carey Act, and the enactment of State laws providing the State legal machinery to put the Carey Act to work. Idaho far outstripped all other Western States in its irrigation development under the Carey act, and eventually passed to private ownership something over 700,000 acres of highly productive irrigated land. This land would now command a market value of not less than $400 million.

Coincident with the Carey Act enterprise, Idaho enacted an irrigation district law in 1895 patterned after the Wright Act of California. This made bond money financing available for other irrigation development. Cooperatives and private companies also made some contribution to the sum total of the present application of water to beneficial use by irrigation.

The Federal Reclamation Act of 1902 added some 425,000 acres of new land development to the State, and, by the Warren Act, furnished supplemental storage water to a large part of all of the irrigated lands in the State. The Indian Service irrigation operations cover about 32,000 acres of land presently developed, and construction is now in progress for 20,000 additional acres.

Currently, irrigation developed with ground water supplies commands considerable attention. More than 500,000 acres of raw land have been brought under irrigation by pumping from this water source in the last 15 years.

Totaling up, it appears that Idaho's irrigation use of water has developed about 2,700,000 acres of sagebrush into highly productive land producing largely nonprice-supported crops. A conservation present-day value attaching to the land alone is more than a billion dollars. The industry related to agriculture adds a considerable figure to the sum total of the invested dollar values in irrigated agriculture.

To get the full picture of the value of Idaho's irrigated agriculture, consideration must be given to the cities, towns, and villages, which have grown up within this agricultural empire. Stores, markets, banks, small manufacturing and professions—all locate and thrive in the midst of irrigation and power development. Without it, they would be here in only very small numbers.

Since Idaho's admission to statehood in 1890, power development, largely by private enterprise, has kept pace with the need for power. There has never been a power shortage of consequence in Idaho. Boise, the capital of the State, was first supplied with incandescent lighting from a hydropower plant in 1887. Idaho presently has within its boundaries a total installed hydropower generating capacity, according to the latest figures compiled by the Northwest Power Pool and the Federal Power Commission, of 1,436,000 kilowatts. Additional powerplants are in course of construction. Of this total generating capacity, the Federal Government, acting through the Bureau of Reclamation of the Interior Department, has provided 176,000 kilowatts incidental to irrigation construction. Muncipalities have build 12,600 kilowatts of capacity. The remaining has been built by utility companies which have kept comfortably ahead of the power needs of the State and who are frequently in a position to export power both to east, west, and northwest.

The principal hydropower potentials remaining for future development lie along the Snake River, where it is the western boundary of the State, and on the Salmon River. Opposition of the U.S. Fish and Wildlife Service, national wildlife groups, and differences of opinion between Federal constructing agencies may for a period delay further hydropower development, but when a critical need for more power develops these conflicts of interest will surely have to be compromised to permit the necessary development to proceed.

Manufacturing, relatively speaking, is a minor but rapidly growing activity in Idaho. It has large saw mills, one pulp mill, working mines, fertilizer plants, chemical plants, and numerous food-processing plants. These activities require but a very small fraction of Idaho's water resource. It is doubtful if industrial water requirements will become a problem in Idaho in the foreseeable future. Certainly this will not occur until long after 1980, the date which your committee set as a terminal date for this study.

Idaho's present annual consumptive use of flowing water, confined to the 6-month crop-growing season, is in the magnitude of 5,500,000 acre-feet. Much more than this is diverted from streams and storage reservoirs, probably from 12 million to 15 million acre-feet, depending on how plentiful the supply is in a given year. The great spread between the quantities diverted and the amount used by growing crops is not lost. It finds its way back into stream systems, traveling either on the surface or underground, or replenishes ground-water storage. As an illustration of how this takes place, the Snake River at the Milner Diversion Dam near Twin Falls, Idaho, is ordinarily held dry from April to October of each year, yet 90 miles downstream it is again a steadily flowing river of some 6,500 cubic feet per second. More than half of this flow is merely water lost to crops through deep percolation into underground reservoirs and channels, or water flowing off the surface from large irrigation projects into the rivers.

There are in operation in Idaho storage reservoirs having an aggregate capacity of 10,400 acre-feet. The larger part of this storage, 7,300,000 acre-feet, was built primarily for irrigation use. However, some of it has power and flood-control features in addition to the irrigation use. Reservoirs which have multiple use have an aggregate capacity of 5,245,000 acre-feet. Several reservoirs have three multiple uses—irrigation, power, and flood control. Reservoirs which have no irrigation use and exist for power and flood control only amount to 3,100,000 acre-feet. Only one dam and reservoir has been built in Idaho for the sole purpose of flood control. Its active capacity is 278,000 acre-feet. Eventually a powerplant may be built at this dam and the water also used for irrigation. Most of the feasible reasonably priced storage is now developed. Remaining sites will involve high costs for rights-of-way and for replacement of existing facilities, such as railroad, highways, powerplants, and towns.

Idaho is not presently confronted with the serious water problems that exist in other parts of the United States. There are minor shortages of irrigation water supply in local areas, but they are gradually being remedied by storage construction, where there is storable runoff and where the economics of construction will permit such action.

Idaho enjoys a bounteous surface-water supply. After it has annually absorbed between 5 million and 6 million acre-feet of water in crop production, there still runs out on its western boundary some 66 million acre-feet of water annually. Not all of this water originates in Idaho. There flows into it from Wyoming and Montana, on the average, about 30 million acre-feet each year.

In addition to Idaho's flows of surface water, the State has one of the world's most remarkable ground-water reservoirs beneath the Snake River plains. Estimates of the amount of water thus in storage range from 50 million acre-feet, upward. The annual increment to this vast reservoir is about 1,700,000 acre-feet from leakage from river channels, from precipitation, and from the deep percolation losses which occur throughout the large irrigated areas above the underground reservoir. Other similar reservoirs, smaller in extent, occur in other parts of the State.

Substantial drafts on these ground-water reservoirs have begun within the last 15 years. Currently they are continuing at a surprising rate, considering cost of development, interest rates, power costs for operation, and the uncertainties of crop prices.

Much of the water leaving the State, in the northern part, will never be decreased by a consuming use. Controlling it for power generation and flood prevention are the desirable objectives. On the other hand, southern Idaho has a dryland potential which can absorb an additional 2 million acre-feet of water as fast as the economics of costs and returns indicate the feasibility of this use of water for agriculture.

At present, this further development of irrigation is going forward at the rate of about 40,000 acres per year. Most of this is in small units, 160 to 640 acres each, using ground water for the irrigation source. Financing could be termed private enterprise with Federal Government loans: FHA, SCS, and similar agencies. Some insurance companies have also entered this loan field.

Only one large irrigation development looms in the near future as a prospect. This is the Mountain Home project, whose first unit would water 135,000 acres. Its authorization is uncertain, but it should certainly occur at the earliest possible date. The amount of water it will consume is inconsequential, compared to the principal sources of supply. The Snake River flows alongside the area. There is excess ground water, and some surplus Boise River storage is also included as a partial source of supply for this project. In the ultimate, there is a potential 400,000 irrigable acres in the Mountain Home project area. Possible sources of water supply for the later units are transmountain diversions from the Payette and/or Salmon Rivers. Here again the problems of anadromous fish must have consideration in planning the dams, storages, and diversions which would be a part of the irrigation systems.

It is doubtful in view of governmental history that Idaho will in the near future become a constructing agency after the manner of California and Texas. Such being the case, it appears that future expansion of the use of water for irrigation will depend on how fast Federal financing becomes available and in what amounts. Idaho is taking care of its increasing power needs by private enterprise.

Some of Idaho's flood problems have been met by the building of large storage reservoirs. Palisades Dam on the Upper Snake, Anderson Ranch Dam on the Boise, and Cascade Dam on the Payette are examples. But much remains to be done.

Agriculture is, and will continue to be the backbone of Idaho's economy. Our many agricultural products grow to perfection. They attract processing, canning, freezing, dehydrating, and other food purveyors from all parts of the United States.

Seed growing, garden and field, plays an important part in irrigated agriculture in Idaho. Moisture can be controlled to bring seed to ideal maturity and it is grown in new clean ground. Hybrid seed from Canyon County, Idaho, goes to many foreign countries. Livestock growing absorbs the pastures and forage crops. Dairying looms high in money return to the State's people.

Idaho wants to see more irrigation development become a reality. It has the finest remaining potential in the United States. There are fertile drylands, plentiful unappropriated water supplies, and favorable growing climate. In fact, we have all the requisites to make more irrigation just as successful as the present projects. It only remains to put water on the land. Then homeseekers and nature will do the rest.

Idaho will cooperate in the way of needed legislation as it has in the past. Through its various departments of State, it will encourage and support economically feasible water utilization developments as present economics and the trends of future economics dictate and justify.

We are seeking—we always have been and we always will—the ways and means of developing, comprehensively, every drop of water that tumbles from the snowpacks of these Idaho mountains. And when we have used that water, whether to help grow a potato or to turn a turbine, or both, then and only then, will we willingly send this water flowing into the canyons along our western border to help develop still another empire further west. I could burden you at length with a recitation of our problems, but you must hurry on. Briefly, what I want for Idaho water resources can be summed up in this fashion.

First, our existing agricultural and domestic water rights must have ironclad protection.

Second, our right to make later overriding appropriation of the water that rises on Idaho watersheds for beneficial agricultural consumptive use must never be drawn in question.

Third, in the field of hydroelectric generation of power I want development of these resources, under plans that are irrevocably consistent with my first two stated objectives.

Fourth, flood control can be most effectively achieved in the headwater streams of a watershed. For that reason we can be a maximum help to the downwater States by concentrating on upstream storage.

I thank you warmly for your courteous attention. With your leave I shall file a copy of this statement with your reporter.

Now, if I may briefly point out on this map where all of these water developments are that I have just been talking about.

Starting away over in the northeast corner of Idaho in Clark, Madison, Fremont, and Teton Counties, near Yellowstone Park, is the Henry's Fork of Snake River and the Teton River. With their natural flow and three reservoirs which hold 210,000 acre-feet of water—170,000 acres are irrigated.

And in Jefferson County 130,000 acres are irrigated mostly from a ground-water supply.

In Lemhi and Custer Counties, the Lemhi and Salmon Rivers furnish enough water without reservoirs to irrigate 100,000 acres of land.

Down in the southeast part of Idaho in Caribou, Bear Lake, Franklin, and Oneida Counties, is the Bear River, a tributary of the Great Salt Basin. Here about 120,000 acres are irrigated from the Bear River and its tributaries, and 50,000 acre-feet in storage reservoirs.

Next following the Snake River Valley from where the river enters Idaho from Wyoming, down to the west side of Gooding County, there is on both sides of the river a great irrigated agricultural empire of 1,500,000 acres watered from the river, its tributaries, ground water, and reservoirs—Jackson Lake in Wyoming, 846,000 acre-feet; Palisades on the Idaho-Wyoming boundary with 1,200,000 acre-feet of capacity; and a 114,000-kilowatt powerplant, American Falls Reservoir in Power County, 1,700,000 acre-feet; and a great body of land, 250,000 acres newly irrigated from wells.

From Gooding County to Ada County, the Snake River Valley is sagebrush desert—100 miles of it on both sides of the river where lie large potential irrigation projects.

In the southwest part of Idaho—Ada, Canyon, Gem, Payette, Washington, and Adams Counties—is another irrigated area of 650,000 acres watered from the Snake, Boise, Payette, and Weiser Rivers, and wells and storage reservoirs: Anderson Ranch, 464,000 acre-feet, and a 27,000-kilowatt powerplant; Arrowrock, 286,000 acre-feet; Lucky Peak, 278,000; Cascade, 650,000; and numerous small ones.

As for the power facilities, there are hydroplants all along Snake River and its tributaries from Palisades, the farthest upstream, to Brownlee, the farthest downstream plant. All told there are 24 powerplants in the Snake River Valley in southern Idaho ranging in size from 1,000 kilowatts to 450,000 kilowatts, which have a total generating capacity of 1,100,000 kilowatts.

That, briefly, gentlemen, is the sketch of the irrigation water resource development in the State of Idaho.

Thank you.

The CHAIRMAN. Tell us what the green represents on the map.

Mr. CARTER. National forest. The green areas are national forest and these purple areas are reservations. That is the Atomic Energy Commission and this is an experiment station and this is a reservation. That is the Mountain Home Airbase.

Senator CHURCH. I want to say, Mr. Chairman, that Idaho has the largest national forest reserves in the country aside from the State of Alaska.

One other point.

Mr. Carter, who presented this very comprehensive statement for the Governor, is our State reclamation engineer. I would underline one statement that he made that needs to be better understood. That is, on irrigated land we are not actually contributing to

48186 O - 60 - pt. 4 (Face p. 558)

STATE OF IDAHO

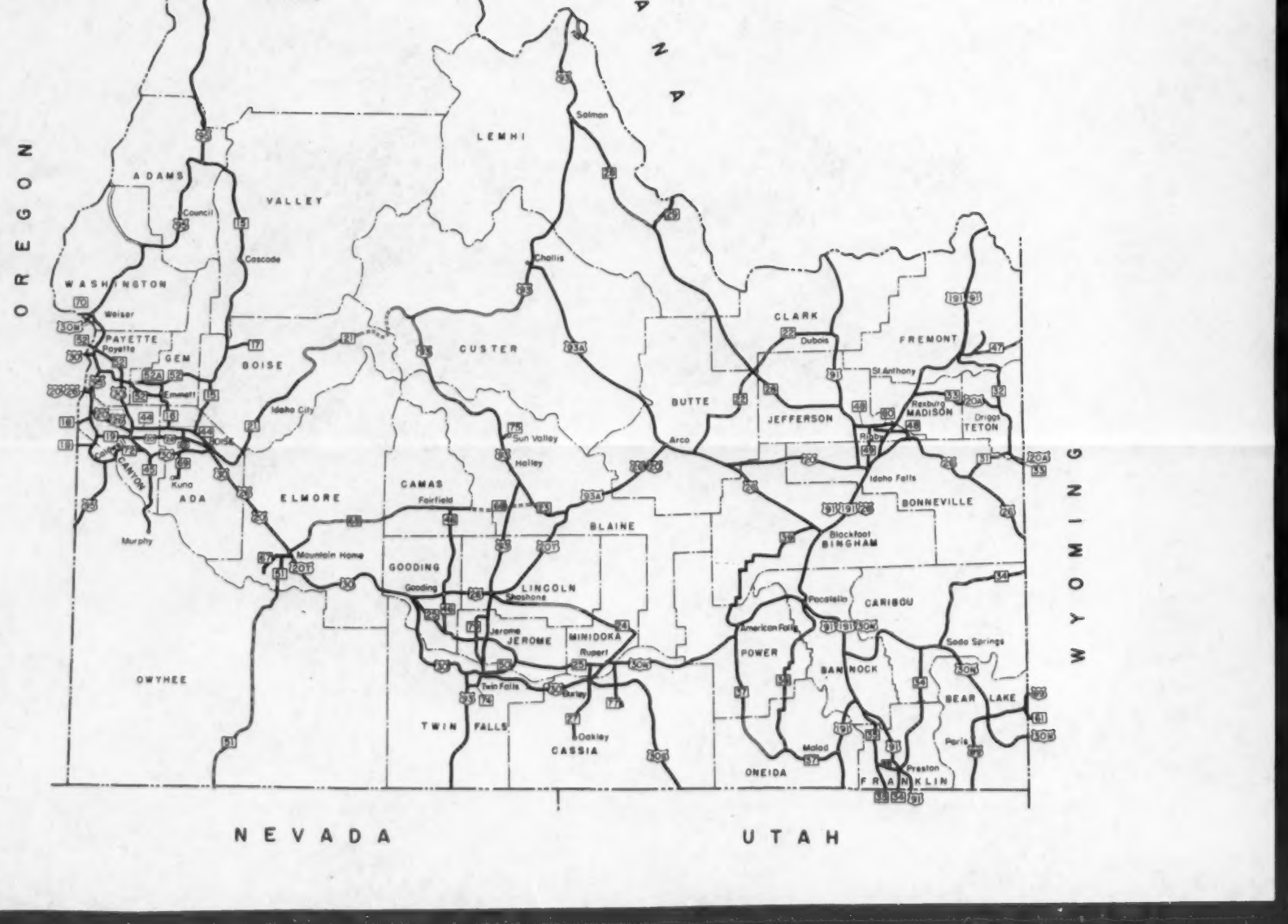
1956

10 5 0 10 20 30 40 50

SCALE IN MILES

LEGEND

Paved road
Bituminous treated
Metal surfaced
Graded and drained
Unimproved earth


OREGON
NEVADA
UTAH
WYOMING
ADAMS
VALLEY
WASHINGTON
PAYETTE
GEM
BOISE
ADA
CANYON
OWYHEE
ELMORE
CAMAS
BLAINE
GOODING
LINCOLN
JEROME
MINIDOKA
TWIN FALLS
CASSIA
LEMHI
CUSTER
BUTTE
CLARK
FREMONT
JEFFERSON
MADISON
TETON
BONNEVILLE
BINGHAM
CARIBOU
POWER
BANNOCK
ONEIDA
FRANKLIN
BEAR LAKE
Weiser
Council
Cascade
Emmett
Idaho City
Boise
Kuna
Murphy
Mountain Home
Fairfield
Gooding
Shoshone
Jerome
Rupert
Twin Falls
Burley
Oakley
Salmon
Challis
Sun Valley
Hailey
Arco
Dubois
St Anthony
Rexburg
Driggs
Idaho Falls
Blackfoot
Pocatello
American Falls
Soda Springs
Malad
Preston
Paris

the surplus problem which is largely the result of the one crop areas of the country, not of the irrigated areas. This I think, needs to be understood in a State whose economy is so largely dependent upon agriculture.

Senator DWORSHAK. The next witness is Fred Cooper, State senator on importance of water resource to agriculture.

STATEMENT OF FRED COOPER, PRESIDENT, IDAHO STATE RECLAMATION ASSOCIATION

Mr. COOPER. Chairman Kerr and members of the Senate committee, my name is Fred Cooper of Grace, Idaho. I am a farmer and livestock grower. I am a State senator representing Caribou County, chairman of the irrigation and water resources committee of the Idaho Senate at the last session of the Idaho Legislature, and a member of the Bear River Compact Commission.

I am making this statement as president of the Idaho State Reclamation Association and on behalf of that association's board of directors and members.

The Idaho State Reclamation Association was organized in 1937 and has an active membership of more than 200 local irrigation districts and canal companies which altogether operate the irrigation works in excess of 2 million acres of irrigated land in Idaho. For years the association has been the spokesman for irrigators of the Great Snake River Basin of southern Idaho.

The Idaho State Reclamation Association is a truly grassroots organization of farmers and irrigators. The association selects its officers and board of directors at an annual meeting and all members of the board of directors are men directly connected with irrigation, either as individual farmers or as officers of irrigation districts and canal companies. The board of directors is comprised of 15 members representative of the different geographical sections of the State's water interests. The State reclamation engineer and the Idaho director of the National Reclamation Association are also members of the board of directors. The association is financed by irrigation districts and canal companies on a pro rata acreage basis, and by business firms whose livelihood is related to agriculture. The voting power of the association, however, is limited to bona fide representatives of irrigated lands.

The Idaho State Reclamation Association held its annual meeting in Idaho Falls on September 25 and 26. At that meeting I was authorized to make this statement on behalf of the association and we appreciate this opportunity to present our views concerning future water-resources utilization in Idaho.

At that meeting the association adopted a number of resolutions on water-resources development, reflecting the views of the association.

One of the most important, and one upon which I should like to make some additional comments, is that relating to upstream storage for irrigation and flood control purposes. In view of its significance in relation to this committee inquiry, I should like to read it.

Whereas there are numerous flood control and erosion problems throughout the irrigated portions of the State, along the Bear River and Snake River, including among others the following tributaries: Blackfoot River, Portneuf

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River, Willow and Sand Creeks, Payette River, Teton River, Little Wood River, the lower Boise River, and many other streams; and

Whereas recurring damages result annually from flash and runoff floods; and

Whereas there is need for a comprehensive study of the storage possibilities in the Snake River and tributaries above American Falls for the purpose of providing flood control, additional irrigation storage, and incidental power benefits; and

Whereas it is generally recognized that storage for flood control should be in the same area where floods occur: Now, therefore, be it

Resolved, That it is the sense of this meeting that the State reclamation engineer use all his power to bring these problems to the attention of the proper Federal agencies for their consideration and correction; and be it further

Resolved, That the Idaho State Reclamation Association urge that adequate appropriations be made available by Congress to permit the Bureau of Reclamation and the Corps of Army Engineers, and other interested Federal agencies to continue with studies and investigations of water resources development and flood control on the Snake River and its tributaries, so that maximum development of irrigation and flood control can be effected in the upstream areas; and be it further

Resolved, That the Corps of Army Engineers, in connection with the Bureau of Reclamation, be urged to complete at the earliest possible date the comprehensive survey of storage possibilities in the area of the Snake River above American Falls; and be it further

Resolved, That as a part of that survey a further evaluation be made by the Bureau of Reclamation of the Narrows site, or an alternative site or sites, including in that study the possibilities of providing additional irrigation storage for the Upper Star Valley in Wyoming; and be it further

Resolved, That copies of this resolution be transmitted to the Idaho congressional delegation and the Governor of the State of Idaho.

The association has adopted similar resolutions over a period of years. We have always stood for the principle that future storage on Snake River and its tributaries should be upstream where the floods occur, and that upstream storage will inevitably result in the best comprehensive development of the river.

Governor Smylie expressed our views very appropriately testifying before the Senate Committee on Interior and Insular Affairs several years ago when he said:

* * * We have flood control problems in Idaho, upon the upper reaches of practically all of our streams. Damages amounting to many tens of thousands of dollars frequently occur. We are also sympathetically aware of flood-control problems on the lower reaches of the Columbia River. We know that dollars spent for flood control storage on the upper reaches of our streams, at points where they will protect our Idaho lands, serve the dual purpose of protecting us in Idaho and likewise our friends on the lower Columbia. Likewise, we know that if we neglect these upstream sites and spend our dollars at points where they protect only the lower Columbia, and totally ignore the danger upstream we are indulging in inefficient planning. * * *

I would also be remiss in my duties as chief executive if I did not state clearly, and without equivocation, that Idaho must always insist that every dollar of Federal money available for our State be used in constructing these upstream projects which will facilitate the use and reuse of our waters within our boundaries before they pass irrevocably for use in the downstream States. Water is Idaho's prime asset in the competing economics of the Northwest. Stored in the upper reaches, these waters will give the dual flood-control advantage heretofore mentioned, will be available for use and reuse in irrigation as they pass through the several hundred miles of our Idaho Snake River Basin. They will be available for use in hydroelectric production at all of the projects throughout the length of the Snake River, as well as those further downstream on the Columbia. In short, their storage at these upper points will inevitably result in the comprehensive development of the river. The only way to get comprehensive development is by upstream storage. * * *

We know that the logical stream development is from the headquarters downstream. We Idahoans were the first to put the headwaters to beneficial con-

sumptive use and we demand that our right to these headwaters for beneficial consumptive use remain inviolate.

There is land yet to reclaim; land which someday must be used to feed the Nation's rapidly increasing population. We hope to build dams in Idaho for the benefit of Idaho; dams to circumvent floods on the plains of the mighty Snake; dams to store water for irrigation of more and more land; dams whose impounded water might be used to recharge the underground flow now serving the pump irrigators of central Idaho.

Also, Colonel Tandy, when he retired several years ago as district engineer for the Walla Walla district, which includes the Snake River, made this statement:

* * * I would like to point out that the floods in this area are produced by precipitation in the form of snow falling at elevations above 6,000 feet. Precipitation below this elevation in the upper Snake River Basin is generally so limited as to not be consequential in relation to most flood control problems. Likewise, feasible large-scale storage projects for irrigation will be found in or close to the mountainous areas and along the main stem of the Snake River.

Essentially what is needed is to store the waters resulting from the melting of the snow packs as far upstream as practical, and to utilize such stored waters as they flow from the higher elevations above 5,000 to 6,000 feet to the lower elevations for power purposes, and as a result of the regulated flows to increase the irrigation and power developments downstream.

There are many areas in Idaho, tributaries to the Snake River, which are subject to severe flooding with the consequent heavy property damage. One of the worst was in the fall of 1955 and the spring of 1956 causing widespread damage.

Also, serious floods, with heavy resulting property damage occur on the Bruneau, Owyhee, Malheur, Burnt Wood, Weiser, and Payette Rivers in the Central Snake River Valley. There are innumerable storage sites on the tributaries both in the Upper Snake and on the tributaries in the Central Snake Basin. An inventory of these projects is contained in the Corps of Engineers 308 Report on the Columbia River Basin, House Document No. 531 and in the Bureau of Reclamation report on the Columbia River, House Document No. 473. The estimated potential storage from these proposed projects would total almost 8 million additional acre-feet. There is almost 10 million acre-feet of storage on the Snake River and tributaries now in operation. With this additional storage the Snake River and tributaries would be completely controlled.

Additional storage on the upstream tributaries will serve a dual purpose in whicsh the reclamation interest of the State are most vitally concerned. This additional storage will aid the continuing irrigation development that will unquestionably occur in the Snake River Basin. This additional storage will not only be available for flood control, but will provide necessary water for irrigation.

According to the Idaho Department of Reclamation, there are approximately 6 million acres of irrigable land not now developed in southern Idaho. The great bulk of this total is on the Great Plain of Snake River bordering present limits of irrigation on the north side of the river, on the broad flat valleys of Raft River and Goose Creek, on the great Bruneau Plateau which extends from the headwaters of the Owyhee River easterly to the Salmon Falls Creek drainable, and on the Mountain Home Plateau south and east of Boise. The soils are for the most part of excellent quality and of high capability for the production of crops.

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There is an average of 12,500,000 acre-feet passing Weiser in the Snake River annually. Each acre of new land irrigated depletes the water supply by approximately 2 acre-feet for each acre of land irrigated. At the rate of 2 acre-feet depletion per acre, the 12,500,000 acre-feet passing Weiser would provide water for in excess of 6 million acres in the Snake River Basin. The only limitation from the time when this can be feasibly done is the matter of economics—as to when water can be pumped to a height profitable for use in growing crops.

Even now there are large areas where water is pumped from 200 to 400 feet and even greater heights. There is an excess of 1 million acres below King Hill lying tributary to the Snake River which could be irrigated quite easily by pump lifts between 600 and 1,000 feet. The cost of lifting water to this new land is not in excess of that already being paid in many areas of the United States, particularly in the Southwest.

I would like to add that I do not wish to be understood that the entire 6 million acres of irrigable land in the Snake River Basin will ever be developed. The late Mark Kulp, State reclamation engineer, however, estimated that there would be in excess of 2 million acres developed in the foreseeable future. Mr. Kulp in 1953 estimated that 600,000 new acres would be irrigated by 1965, 900,000 new acres by 1977, 1,100,000 acres by 1985, 1,500,000 new acres by 2000 and 2,115,000 new acres by the year 2040. In his opinion these estimates were reasonable and conservative. In Mr. Kulp's opinion a reasonable annual increase in irrigated acres in Idaho from 1950 to 1985, based upon what has happened in the past and what is occurring now, would be about 30,000 acres a year. It was Mr. Kulp's opinion that a conservative estimate of the average annual increase for the period of 1947 to the year 2040 would be about 23,000 acres of new land per year. This does not include supplemental water for additional thousands of acres now receiving an inadequate supply.

The development of upstream storage, on the tributaries and on the main stream, would accomplish both the purpose of flood control and assist in the development of these large potential irrigation developments. Obviously all of this upstream storage that will ultimately be required cannot be commenced at once. Nor can it all be precisely planded at one time, but the time to start is now.

We are informed that the Upper and Middle Snake Basin investigation which is a cooperative effort of the Bureau of Reclamation and the Corps of Engineers is nearing completion and that a report may be expected during the coming year.

The purpose of this basin investigation is to evaluate the undeveloped land and water supply potential of the Snake River Basin upstream from the Powder River to determine the extent and characteristics of possible future development including a study of upstream storage possibilities to meet the multiple resource development needs of the area. Other multiple purposes such as fish and wildlife, recreation, power, in addition to flood control and irrigation, will be studied. We understand that the investigation will cover all tributary streams. The Corps of Engineers embarked on a study of a similar nature several years ago at about the same time that the Bureau of Reclamation investigations began. The efforts of the two

agencies are being combined and we are informed that the report will be a joint effort of the Bureau of Reclamation and Corps of Engineers. The irrigation and related water and land resource utilization of the study are the Bureau's responsibility and the corps' major responsibility will be flood control problems and potentials. Because of the comprehensive nature of the study, the assistance and advice of Federal and State agencies concerned with water and land resource development plans is being solicited. This would include the Department of Agriculture, other Interior Department agencies, the Idaho Department of Reclamation, the Idaho Fish and Game Department, and others. The Idaho State Reclamation Association strongly urges that this report be completed at the earliest practicable date and it is hoped that it will furnish the basis for future project-by-project planning.

Thus far I have referred only to the contribution which upstream storage would make to future irrigation development in southern Idaho. Another water resource of great importance to future irrigation development in south central and eastern Idaho is underground water. Principal source is found in the Snake River plain on the north side of the river extending from near St. Anthony on the east to Bliss on the west, a plain about 250 miles long and 60 to 70 miles wide. The aquifers in this area serve both as a vast storage reservoir and a ground water conduit. Ground water sources appear almost limitless. Considered in its entirety it is a reservoir in which several million acre-feet of water could be withdrawn by pumping lifts that range from comparatively few feet to several hundred feet. Since 1947 new land irrigated entirely from ground water sources and developed solely by private enterprise has increased at the rate of approximately 30,000 acres per year. This does not include the Bureau of Reclamation's north side pumping unit of the Minidoka project, now completed, comprising some 70,000 acres. This ground water source, which appears to be almost unlimited, will make a major contribution to the development of new lands. The possibility of recharging this vast underground reservoir by diverting surface flows of Snake River during the flood season has also been suggested and is worthy of further study. In this manner drawdown from pumping would be decreased and a measure of flood control realized from the diversion of peak flood flows.

It will thus be seen the future potential irrigation development in Idaho is tremendous. The land and the water are there. Much planning and study, particularly with respect to the development of upstream storage is needed, to realize the full potential.

I should like also to comment briefly on several other resolutions adopted by the Idaho State Reclamation Association affecting water resources. The association adopted a resolution in opposition to the so-called wilderness legislation S. 4028, "To establish a National Wilderness Preservation System." which would seek the conversion of large areas of the public domain into "Wilderness areas." The major reason why we, representing the reclamation interests in Idaho, are opposed to this legislation is that the preservation of wilderness area is made paramount. All other resource developments within the wilderness area not directly related to the main purpose are purely incidental. The major objection to this proposed legislation is that it

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is a single-purpose, whereas the proper development and utilization of the natural resources of these wilderness areas must be multipurpose. Since the preservation of wilderness area is paramount, it would prevail if there was any conflict with any other purpose.

Of great significance is the impact of this legislation on the future development of reclamation. I have already commented upon the large areas of irrigable land available for future irrigation developments. The only way that water can be made available for this land is by the construction of upstream reservoirs on the tributaries of the Snake River which lies in this so-called wilderness area. It is obvious that there would be a conflict between the preservation of wilderness areas untraveled by man and the construction of upstream storage projects for irrigation and flood control. Also, I believe that this bill, if passed, would also have a very serious impact on the livestock industry. The livestock industry is also an integral part of Idaho's economy and is one that I know, since I have been in the sheep business many years. The livestock industry, to survive, must use Federal lands for grazing purposes—the Federal range under the supervision of the Bureau of Land Management and the national forests under the supervision of the Forest Service. The livestock industry has grazed these Federal lands under rules and regulations of these agencies which have been tested for many years and found feasible and workable. Yet by the very terms of this bill the administration of these areas by such agencies must be such as to conform with the paramount purpose of this bill to preserve the wilderness areas inviolate. Again there would be a conflict. It is my opinion that if this bill should become law it would have a very substantial prejudicial effect on future reclamation development in the Western States.

The association also adopted a resolution favoring the adoption of a Columbia Basin interstate compact. Negotiations have been pending for several years for Columbia Basin interstate compact by the compact commissioners of the seven Columbia Basin States. Such a compact provides a method by which the respective States can compose differences on water use and provide a method for orderly development of the basin water resources. The association endorses the adoption of such a compact provided that the principle of subordination of downstream nonconsumptive uses to upstream beneficial consumptive uses, both existing and future, be accepted by the Columbia Basin States and by the United States. We believe this to be essential for the full potential irrigation development in Idaho.

The association also adopted a resolution strenuously opposing in any form the establishment of a Columbia River Development Corporation or a Bonneville Project Corporation. Legislation has been introduced during the past two sessions of Congress proposing it set up a corporation in the northwest with farreaching powers for the construction, operation, and development of water resource projects on the Columbia River and its tributaries, including the Snake River, in Idaho. We feel the establishment of such a corporation is a thinly disguised substitute for a valley authority, and in effect would constitute a form of Columbia valley authority. The association has repeatedly gone on record as opposing any and all types of valley authority and wants no part of turning over control of our water resources to any central Federal authority.

Finally, I would like to comment briefly on a matter which is of great concern to reclamation interest in Idaho as well as other Western States. This is the growing tendency of certain Federal agencies to ignore the sovereign rights of the States to regulate and control the appropriation and use of waters within the States. As a result of several recent Federal Court decisions, particularly the Pelton Dam case (*Federal Power Commission* v. *Oregon*, 349 U.S. 435), certain Federal agencies have taken the position that Federal agencies need not comply with State laws in the acquisition and appropriation of water rights. This, despite the fact that Congressional enactments over many years indicate a Congressional intent that Federal agencies must comply with State laws. These Federal decisions together with the contentions of certain executive departments of the Federal Government lead us to believe that our water rights, as we have known them, are in jeopardy. A number of bills were enacted at the last session of Congress to correct this situation and to reestablish what we have always thought was the congressional policy with respect to the recognition of State water rights. Extensive hearings were held before the House Subcommittee on Irrigation and Reclamation last spring. At our convention last month, the association adopted a resolution strongly urging that Congress enact a law so clear and unambiguous as to be incapable of evasion by either the executive branch or judicial interpretation and require Federal agencies in acquiring the rights to the use of any water to proceed in conformity with State laws relating to the control, appropriation, and distribution of such water, and providing that the United States may be sued in the State courts. We believe there can be no orderly development of the water resources in the West until this controversial problem has been set at rest.

The association is glad to have this opportunity to appear before this committee and present its views.

I think you for your kind attention. I apologize for taking too much time.

Thank you gentlemen.

Senator DWORSHAK. We will now hear from Ross Leonard, director of the Idaho Fish and Game Department.

STATEMENT OF ROSS LEONARD, DIRECTOR, IDAHO DEPARTMENT OF FISH AND GAME

Senator DWORSHAK. How long a statement do you have?

Mr. LEONARD. I have about a 10-minute prepared written statement, Senator, but maps over there also show what can be done. I can confine it to about 15 minutes.

I do wish to express our appreciation to the committee for giving us the opportunity to appear before it to discuss some of the problems associated with the fish and game problems in the State of Idaho.

In order to expedite things I shall confine myself strictly to the prepared statement.

This great State of Idaho is not only one of the few States in which fishing and hunting is big business—it is one of the few remaining States where the pursuit of fish and game is generally coupled with success. One of the reasons for this is that much of Idaho's area is

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about the same as it was before the western movement of civilization—millions of acres of mountain wilderness interspersed with thousands of miles of clear streams and a thousand lakes.

In this State we can boast of the largest elk herd in the United States and perhaps even the world, of rugged mountains well populated with deer, elk, mountain sheep and goat, of timbered plateaus with moose, deer, elk, and even caribou and bison, of desert valleys where "antelope roam," of valuable fur resources. We can boast of cultivated lands and uplands teeming with game birds; of ponds, lakes, and marshes covered with waterfowl.

WILDLIFE POLICY OF THE STATE OF IDAHO

Section 36–103 of the Idaho Code sets forth the wildlife policy of the State of Idaho:

All wildlife, including all wild animals, wild birds, and fish within the State of Idaho, is hereby declared to be the property of the State of Idaho. It shall be preserved, protected, perpetuated, and managed.

The authority and duty and the power consistent with the policy and with the constitution and laws of the State to administer the wildlife policy is vested in the Idaho Fish and Game Commission.

Idaho statutes recognize the continuous changes that are taking place and the need for flexibility in the administration of the wildlife policy. To this end the need for ascertainment of facts from time to time is of paramount importance if the fish and wildlife resources are to be perpetuated. (Sec. 36–104.)

VALUE OF ADEQUATE, CLEAN WATER

The importance of adequate supplies of clean water for the maintenance of fish and wildlife is well recognized. It isn't enough to have water in order to live, however. The water must be of such quality that the living organisms may carry on their life function, including that of reproduction, in a natural manner. Trout may be able to live for years in silt-laden waters, but their spawning can be a complete failure because of silt deposition on the eggs. Similarly, waterfowl may live on or near waters polluted with heavy metal salts, but their reproductive process can be impaired completely. Water quality helps determine food quantity and quality and thereby is of primary importance in producing optimum living conditions for our fish and game resources.

We also bear some distinction of being the only inland State—or province, for that matter—which has valuable anadromous runs of Pacific salmon and steelhead trout. Our thousand lakes and thousands of miles of streams teem with trout and other game fish.

We will also lay claim to being the State with the highest percentage of its residents who hunt or fish. In Idaho, 55 out of every 100 residents—men, women, and children—go fishing or hunting. Each year they spend over 3½ million days angling and 2 million days hunting. This is equivalent to 15,000 years of hunting and fishing every year by Idahoans in Idaho.

In addition to our own folks, residents of all the other States, including Alaska, come to Idaho for the purpose of hunting or fishing.

Idaho is fortunate, indeed, first in having this wonderful heritage of natural resources, resources which renew themselves annually without too much effort on our part, and second in having the land and the equally important water with it for the maintenance of these resources.

VALUES OF HUNTING AND FISHING

The full value of the recreational pursuit of fish and game cannot be measured. From the monetary standpoint, however, it is worth over a billion dollars a year in the United States in fishing and hunting expenditures. In Idaho in 1953, a direct expenditure of over $43 million was made for fishing and hunting. With today's increased costs and increased numbers of sportsmen, it is estimated that this value exceeds $50 million annually. Hunting and fishing is reported to be Idaho's third largest industry today, exceeded only by agriculture and the lumbering industry.

A good example of the value of a small segment of the fish and wildlife resources of Idaho is the steelhead trout fishery of the Clearwater River. In fish year 1957–58, it is estimated that the value of this run of fish exceeded $1 million when the downriver sport and commercial values are included. In Idaho, angling expenditures for this one year by anglers seeking these fish, both the adults and the young, exceeded three-quarters of a million dollars. These self-renewable resources are well worth preserving, protecting, and perpetuating.

THE COLUMBIA RIVER FISHERY DEVELOPMENT PROGRAM

In 1938 the Congress authorized certain biological and engineering investigations of problems affecting the fishery resources of the Columbia River which were undergoing a steady decline. In 1949 the Columbia River Fishery Development Program became a reality. This action program, confined then to the Columbia River and its tributaries below McNary Dam, was designed to halt the decline of the salmon and steelhead resources of this great river system.

In 1956, Idaho became an active participant in this fishery development program. We are grateful to the U.S. Senate for recognition of the value of the Idaho stocks of salmon and steelhead and for the inclusion of Idaho in this development program.

I might comment there is a detailed chart attached to this showing the expenditures and projects which will be included in the record, which I will not outline at this particular time.

Since the inception of the program about $15 million have been spent in constructing hatcheries, installing fish ladders and fish screens, removing log jams and in other activities necessary to fulfillment of a complete restoration program. The nature and extent of this program indicates the value which is placed on a small, but very important segment of our fish and wildlife resources.

CONFLICTS IN WATER USE

On numerous occasions when the Idaho Department of Fish and Game has objected to certain features of water use projects or has recommended methods of mitigation or replacement of losses to fish

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and wildlife resources caused by certain projects, they have been condemned as obstructionists. In attempting to carry out statutory obligations, the department has never opposed the orderly development of water use projects in the Columbia Basin. It will continue, to the best of its ability, to make recommendations of benefit to the public interest and thereby carry out their legally recognized duties and powers.

At today's accelerated rate of progress, the availability of water for use by all interested groups is becoming critical and conflicts in water use projects with the fish and wildlife resources are many and complext. A partial listing of these conflicting interests which affect our fish and wildlife resources are:

1. Overappropriation of streamflows

The Idaho constitution provides "the right to divert and appropriate the unappropriated waters of any natural stream to beneficial uses, shall never be denied * * *" (limitation and regulation for power purposes excepted). In some Idaho rivers this has permitted the appropriation of all stream flows without regard to the needs of fish and wildlife and pollution abatement as well as other beneficial uses downstream.

With this constitutional provision, and it seems to be quite common in the Western States, there can be no multiple use, comprehensive development of water resources which would give consideration to all beneficial uses. The more recent actions of legislative bodies indicate it was not the intent of the framers of the constitution to have streams dried up by over-appropriation.

We need not go far from Boise to demonstrate the principle of over-appropriation. During the winter months, the Boise River, passing through our city limits, is dry or so reduced in flow that it becomes filled with sludge from industrial plants and is lacking in flow sufficient to dilute the effluent from sewage treatment plants. As a result, all fish life is lost.

Strangely enough, this has occurred at much more frequent intervals since the construction of a Federal flood control dam, Lucky Peak, and for which recommendations were made by the U.S. Fish and Wildlife Service and this State for releases of water adequate to prevent these losses.

2. Dam construction

The feverish haste with which dams are being proposed, authorized, planned and constructed points to the need for planned, orderly, multiple use water resource development. The construction of a dam may have many and serious effects upon the fish and wildlife resource. The dam causes a migration block to fish and the reservoir to big and small game. Flooding in the reservoir area causes loss of spawning area and stream habitat for fish, nesting and/or rearing habitat for game birds and fur, and browse and critical winter range areas for big game. An area of decreased food productivity in the water fluctuation zone is created and abnormally increased populations of undesirable fish species are a product of the new impoundment.

Any one of these can affect an important segment of our fish and wildlife resources in a varying degree up to its complete destruction. Loss of several segments of the same resource becomes serious. It is estimated, for example, that over 40 percent of the original salmon

and steelhead habitat of Idaho has been lost because of the construction of five dams, one each on the Boise, Payette, Snake, Owyhee, and Clearwater Rivers. On the other hand, one high-main-stem dam could destroy all of the salmon and steelhead runs in Idaho.

Safe downstream passage of fish over high dams is still not a reality even though facilities are operating at three high dams in the Pacific Northwest. The best of present-day knowledge which went into the planning of these facilities needs to be augmented with much more intensive investigation to evaluate these facilities and determine why they are not operating adequately for protection of the downstream migrations of salmon and steelhead. Millions have been spent to build these facilities but money and manpower to evaluate them are unavailable.

Methods for replacement of vital big game winter ranges which would be inundated by pools of several dams proposed in the revised "308 report" of the Corps of Engineers need considerable study. Bruces Eddy is an example of a proposed project which is not authorized but for which about $1,500,000 have been made available for feasibility studies. Engineering feasibility studies are progressing rapidly but studies to determine what might be done with the fish and wildlife resources which would be seriously affected by this project are nonexistent.

3. Pollution

The problems associated with water pollution and pollution abatement need to be considered in multiple use water developments. Water pollution affects fish and wildlife which need clean water to live at the optimum level. It appears that both State and Federal regulations need strengthening. I might add that this also is affecting human population.

RESOLUTION OF CONFLICTS

In order to prevent or alleviate conflicts in multiple use, comprehensive development of water resources, there must first be a recognition of the needs and values of the respective water uses. All too often, developers of power, reclamation, flood control, industrial, and—yes—even fish and game projects fail to recognize and appreciate each other's problems. There is particularly a lack of recognition of values which are of general public interest such as fish and wildlife. All too often the almighty dollar transcends the consideration of the public good.

Recognition of the law is not enough in consideration of the beneficial uses of water, there must also be a recognition of responsibility to other uses, including fish and wildlife. Public Law 85–624 is a giant stride forward in this recognition at the Federal level. This is undoubtedly the most important conservation legislation in the past 20 to 30 years and opens up a vast new area of cooperation of Federal construction and regulatory agencies with fish and wildlife conservation agencies.

This act, in stating—

* * * wildlife conservation shall receive equal consideration and be coordinated with other features of water resources development programs * * *

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certainly points to the need for orderly development of water use projects. That is exactly what this department, in recognition of the need for water development, is requesting—an orderly development. That is why we favor some projects over others—because their effects upon this wonderful fish and wildlife heritage are less damaging than other projects with comparable flood control, irrigation, or power benefits. In taking this position, we believe we are discharging our obligations to the present and future generations of citizens of Idaho.

SUMMARY

In summary we believe that for proper resolution of water use conflict we must first have full recognition of all the values accruing to the beneficial use of water, including the fish and wildlife use.

Specifically, we would recommend first the orderly development of water use projects in the Columbia Basin, and second that all provisions be made which are necessary for the maintenance, protection and perpetuation of our fish and wildlife resources; that when these resources cannot be maintained proper measures be taken for their replacement and mitigation.

We fundamentally believe that full recognition must be given to the establishment of the fact that the use of water for fish and wildlife purposes is a beneficial use along with the other vital uses of our valuable water resource.

That closes my written statement.

You will note from the copies you have, there is an appendix attached to this, with a summary of the Columbia River fishery development program as well as the fish population. If I might proceed with the maps at this time I would just take a minute or two on those.

Senator DWORSHAK. This will all go in the record.

Mr. LEONARD. Thank you, Senator.

(The information referred to follows:)

TABLE 1.—*Estimates of size of runs of anadromous species of fish in Idaho waters* [1]

River	Chinook salmon		Blueback salmon	Steelhead trout
	Spring-summer	Fall		
Snake	1,000	20,000		1,000
Clearwater	200			40,000
Salmon	85,000		4,400	40,000
Weiser	4,000			8,000
All others	1,000	500		2,000
Total	91,200	20,500	4,400	91,000
Total, all species	207,100			

[1] Estimate taken from years of maximum size runs, each species.

TABLE 2.—*Estimates of angling intensity and catch of anadromous species of fish in Idaho* [1]

Year	Chinook salmon		Steelhead	
	Angler-days	Catch	Angler-days	Catch
1954	94,300	29,600	184,500	25,200
1955	97,250	38,900	160,700	26,300
1956	99,250	42,700	90,600	15,800
1957	157,300	78,200	148,600	39,540
1958	105,700	49,400	173,300	59,600

[1] From Statewide fishing harvest survey, annual reports, D.J. Project F 18 R.

TABLE 3.—*Summary of Idaho participation in Columbia River fishery development program*

Title	Project type	Contract price	Status
Investigation and planning	Planning	$255,000	Active.
Access and fill at salmon warehouse	Construction	2,490	Completed.
Salmon warehouse plans and specifications	Engineered planning	2,000	Do.
Well at salmon warehouse	Construction	600	Do.
Dagger Falls plans and specifications	Engineered planning	12,020	Do.
Fish screen plans and specifications	do	5,636	Active.
Operation and maintenance, fish screens	Operation and maintenance.	1,600	Completed.
Construction of fish screens	Construction	132,000	Active.
Purchase equipment items, fish screens	Operation and maintenance.	5,000	Do.
Dagger Falls fishway construction	Construction	148,480	Do.
Screen warehouse construction	do	50,500	Do.
Operation and maintenance, fish screens	Operation and maintenance.	14,625	Do.
Available but unobligated to this date		40,000	

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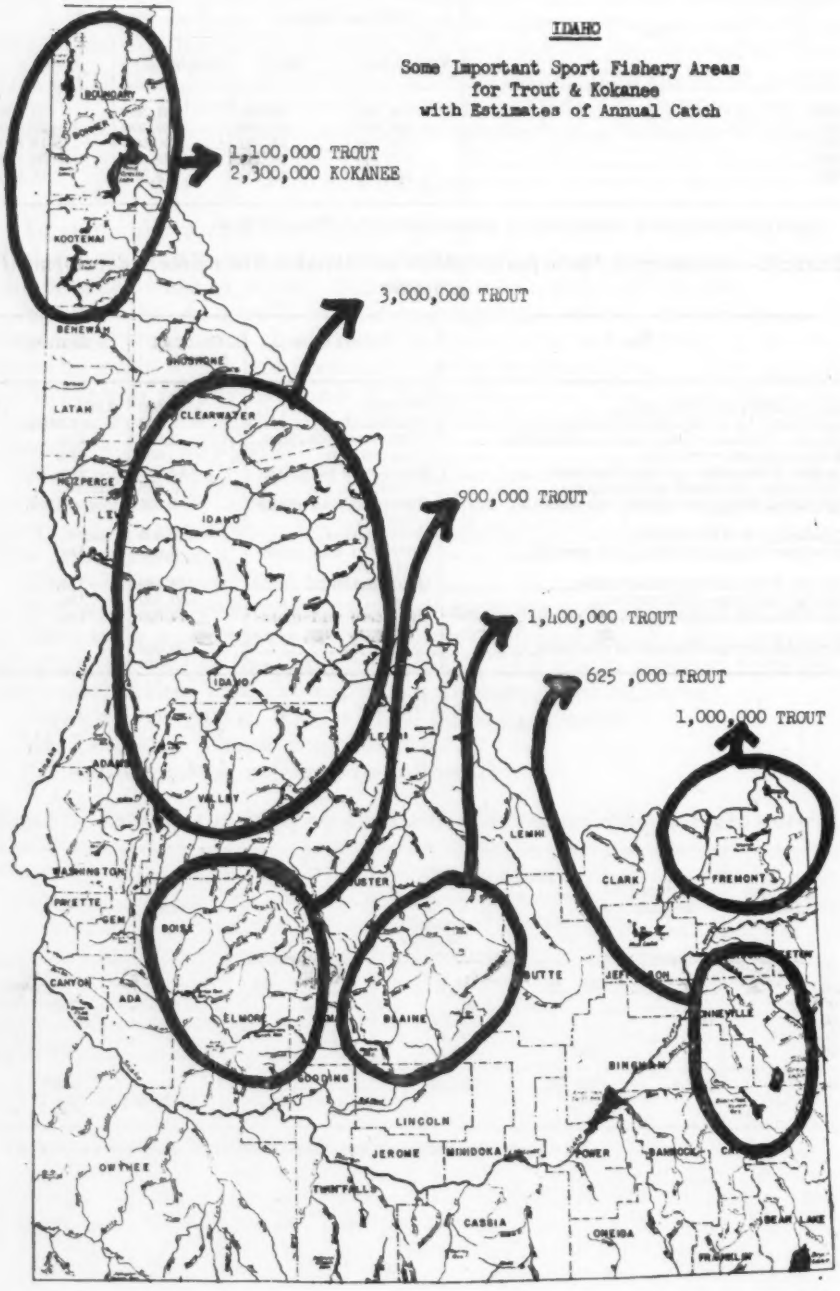
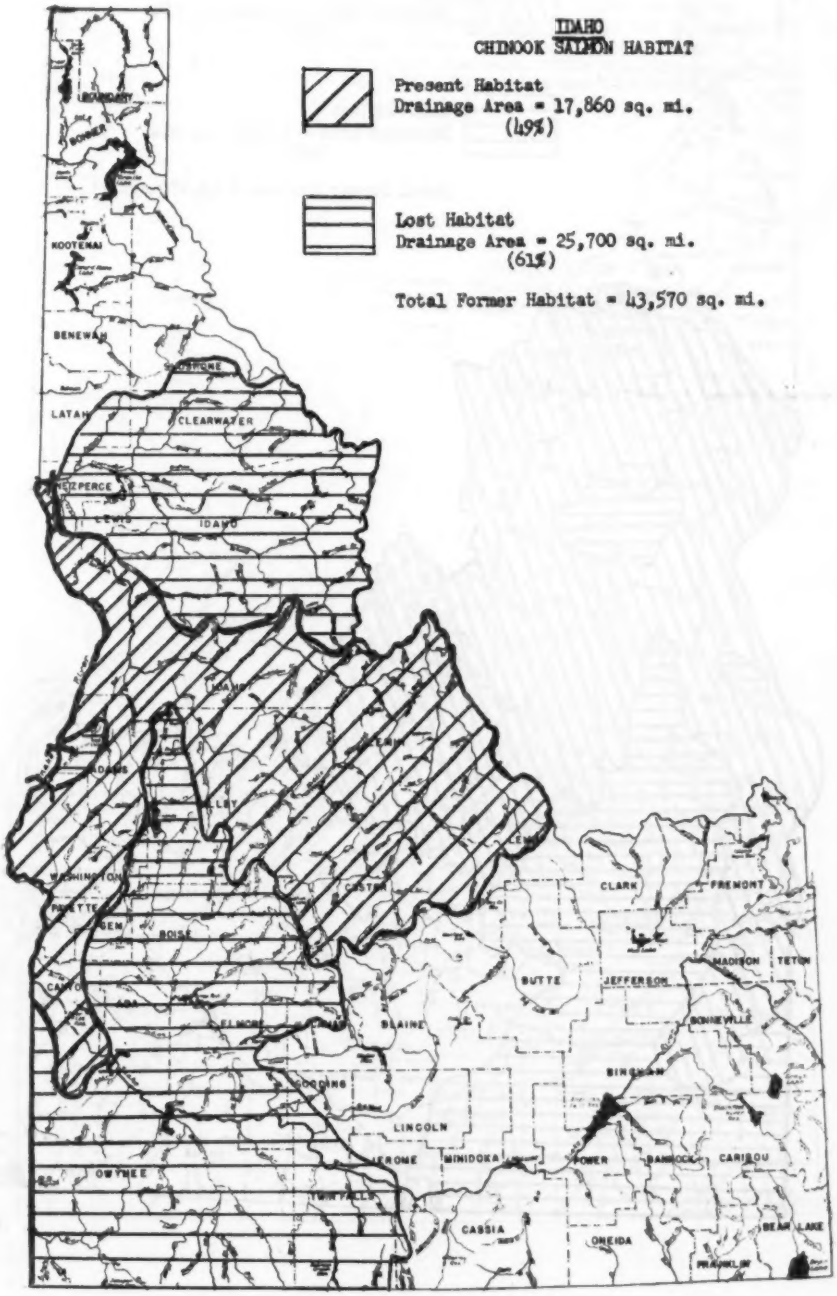

IDAHO
Some Important Sport Fishery Areas
for Trout & Kokanee
with Estimates of Annual Catch
1,100,000 TROUT
2,300,000 KOKANEE
3,000,000 TROUT
900,000 TROUT
1,400,000 TROUT
625 ,000 TROUT
1,000,000 TROUT
BOUNDARY
BONNER
KOOTENAI
BENEWAH
SHOSHONE
LATAH
CLEARWATER
NEZPERCE
IDAHO
LEWIS
ADAMS
VALLEY
WASHINGTON
PAYETTE
GEM
BOISE
CANYON
ADA
ELMORE
BLAINE
CUSTER
LEMHI
CLARK
FREMONT
BUTTE
JEFFERSON
BINGHAM
BONNEVILLE
GOODING
LINCOLN
JEROME
MINIDOKA
POWER
BANNOCK
OWYHEE
TWIN FALLS
CASSIA
ONEIDA
FRANKLIN
BEAR LAKE



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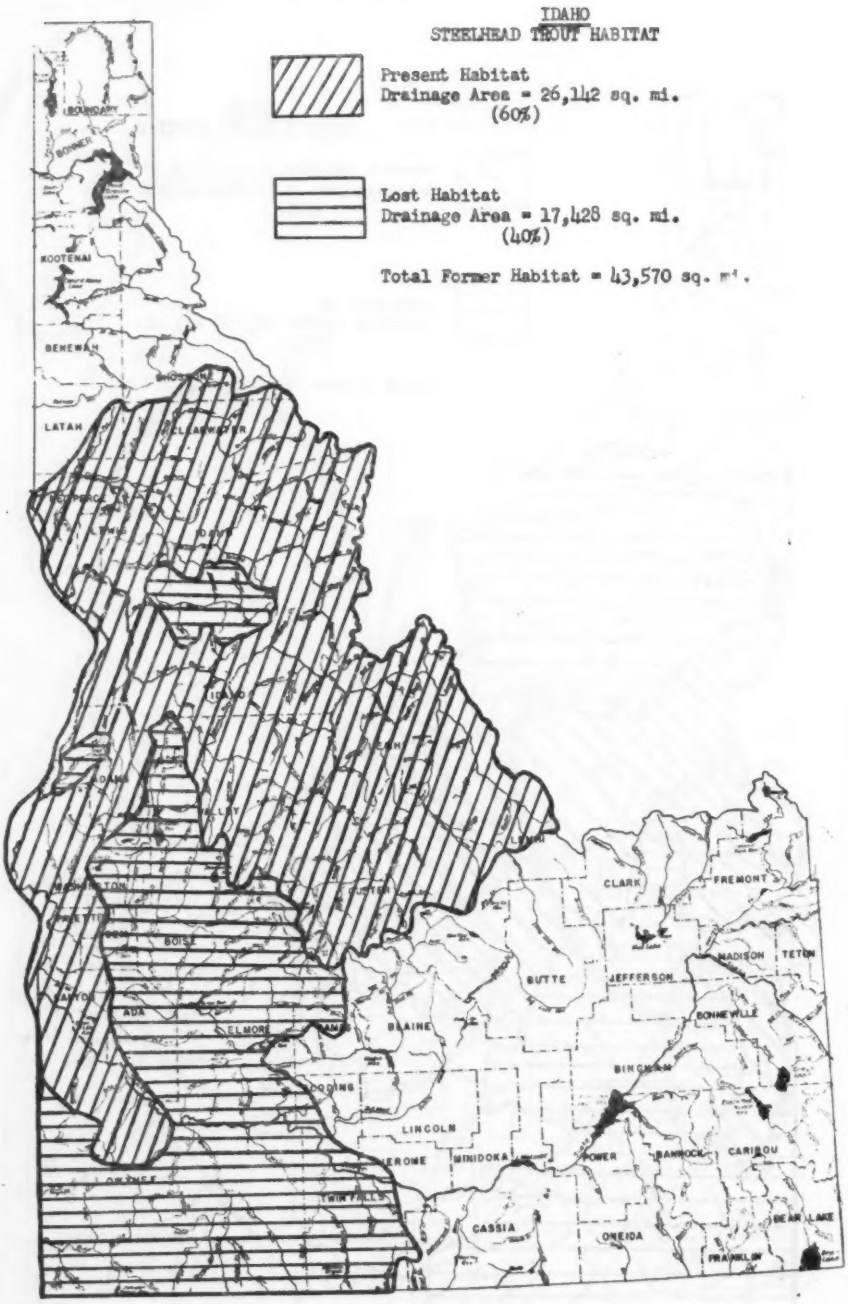
IDAHO
STEELHEAD TROUT HABITAT
Present Habitat
Drainage Area = 26,142 sq. mi.
(60%)
Lost Habitat
Drainage Area = 17,428 sq. mi.
(40%)
Total Former Habitat = 43,570 sq. mi.
BOUNDARY
BONNER
KOOTENAI
BENEWAH
LATAH
CLEARWATER
IDAHO
LEWIS
NEZ PERCE
ADAMS
WASHINGTON
PAYETTE
BOISE
CANYON
ADA
ELMORE
BLAINE
GOODING
LINCOLN
JEROME
MINIDOKA
TWIN FALLS
CASSIA
ONEIDA
POWER
BANNOCK
CARIBOU
BEAR LAKE
FRANKLIN
BINGHAM
BONNEVILLE
JEFFERSON
BUTTE
MADISON
TETON
CLARK
FREMONT

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IDAHO
CLEARWATER RIVER DRAINAGE
Drainage Area: 9600 Sq. Mi.
The largest elk herd in the U.S. and possibly the world is found here.
Half of Idaho's 76,000 elk live in the Clearwater drainage.
40,000 steelhead trout, one of the largest single runs in the Columbia Basin, ascended the Clearwater from the sea - 1958-9.
FALL CHINOOK SALMON
spawning area. About half the fall chinook past McNary Dam spawn here.
BOUNDARY
BONNER
KOOTENAI
BENEWAH
LATAH
CLEARWATER
NEZ PERCE
LEWIS
IDAHO
ADAMS
VALLEY
LEMHI
WASHINGTON
CUSTER
CLARK
FREMONT
PAYETTE
GEM
BOISE
MADISON
TETON
BUTTE
JEFFERSON
CANYON
ADA
ELMORE
CAMAS
BLAINE
BONNEVILLE
BINGHAM
GOODING
LINCOLN
JEROME
MINIDOKA
POWER
BANNOCK
CARIBOU
OWYHEE
TWIN FALLS
CASSIA
ONEIDA
BEAR LAKE
FRANKLIN

Mr. LEONARD. We have here a series of five maps that we have prepared. I think that they are in the pamphlet submitted to you. This is the first one here. It is No. 5 on this list, and I think it is No. 1 on your pamphlet. This deals strictly with resident fishery, trout fishery in the State of Idaho. You will note in the northern counties of Boundary, Bonner, and Kootenai, out of Priest Lake, Pend Oreille, and Coeur d'Alene lakes approximately 1,100,000 trout was taken during last year and 2,300,000 Kokannee. In the Salmon River drainage and the Clearwater drainage, some 3 million trout were taken in that particular area. These are resident fish we are talking about since we have been emphasizing an anadromous fish run. In the Boise-Payette River drainage approximately 900,000 trout were taken. In the reservoirs and Wood River drainage approximately 1,400,000 trout were taken. Over here in the Blackfoot country river drainage, approximately 625,000 trout were taken. In Tremont County, which is the North Fork of the Snake River, approximately 1 million trout were taken in that particular area. I am just pointing out the value of the resident fishery in the State of Idaho.

Next is the Idaho Chinook salmon habitat. The present habitat is shown by the diagonal lines and the lost habitat is shown by the horizontal lines.

You will note that the Chinook salmon habitat has been practically eliminated in the Clearwater drainage. The reason for that was because the power dam was constructed on the Clearwater during the time of migration of the fall Chinook. And they did not have water going through it. Consequently, they were not able to adjust. The steelhead coming through at the time of high water are still found in that drainage. We find this is the most important Chinook salmon habitat we have. It is the Salmon River drainage. This is, of course, the Payette River and the Boise River. They are habitated by the Chinook salmon. They no longer habitate that area——

Senator DWORSHAK. Ross, Saturday I was up at Redfish Lake and visited one of your traps in the outlet of Redfish Lake. I was told you were successful in reinstating the anadromous fish run of the big redfish; is that right? What success have you had?

Mr. LEONARD. It is coming back.

Senator DWORSHAK. That is big fish; is it not?

Mr. LEONARD. Yes; with a blue back. It does not grow large. It does not migrate in the ocean.

Senator DWORSHAK. You get the ones landlocked in the lake yourself, but you also get the migration?

Mr. LEONARD. Yes. This deals with the steelhead trout habitat. The present habitat, you will notice, in the diagonal lines, which includes both the Clearwater, Salmon and Snake River drainage. The lost habitat are shown by the horizontal lines.

I might point out you will find it in your statement that over 40,000 steelhead went up to Clearwater during the last fish year. Of that 40,000, 7,000 were caught below the Washington water power dam. The other 33,000 went to the tributaries to spawn.

I might point out that the South Fork of the Clearwater in here is lost. They lost that.

Coming over here to No. 2 in your book, this is the Salmon River drainage. This is probably the most important Chinook salmon spawning area left in the entire Columbia River drainage.

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We have this small Weiser River spawning area. It is gradually going downhill. It is the most important spawning area left above the Hells Canyon area.

This shows the Clearwater drainage. The largest elk herd in the United States and possibly in the world is found here. Half of Idaho's 76,000 elk live in the Clearwater drainage. This points out that 40,000 steelhead trout, one of the largest single runs in the Columbia River Basin, ascending the Clearwater from the sea in 1958–59.

We have the fall Chinook salmon spawning area in the area on the main Snake River.

That completes my presentation. Thank you very much.

Senator DWORSHAK. The next witness is John Sanborn, former Congressman, who represents the Idaho Farm Bureau Federation.

STATEMENT OF JOHN SANBORN, REPRESENTING IDAHO FARM BUREAU FEDERATION

Mr. SANBORN. Mr. Chairman, Senator Kerr, Senator Young, Senator Dworshak, Senator Church, we appreciate this opportunity to present our case to you. I am John Sanborn, representing the Idaho Farm Bureau Federation.

This organization is made up of nearly 15,000 Idaho farm families, in a State of 31,000 farms. Idaho depends almost wholly upon a continuance of sufficient water to assure abundant crops. Idaho is an arid State, for the most part. We farmers have learned to depend upon the great Snake River to supply us with the water we need for crop abundance.

Idaho must not only be assured of a continuance of the water we have had in the past, but we shall need an increase in irrigation water in the years to come, as we are fast becoming the area of the great Northwest which will be called upon to furnish the bulk of food and fiber to accommodate the people of other States becoming rapidly industrialized. Their farmlands are going into housing and industrial projects. But Idaho is and will, with encouragement and freedom to progress, remain strictly agricultural. In time of emergency Idaho will be looked upon with the hope of millions of citizens to furnish the food required for national health and defense. This is why we wish to impress upon this committee the necessity for keeping Idaho agricultural—and the State can remain agricultural only insofar as it has the water necessary for irrigation.

Idaho is about one-half developed in an agricultural way. Because much of its idle land has not been needed in the past to furnish the food and fiber required by the Nation, this land has been allowed to lie dormant. But the future will call for vast reclamation projects to help assure the security of the Nation and keep the United States the world power it is today. Without sufficient food and fiber the United States cannot hope to cope with the dangers facing us as a producing and export nation. We all know of the threat against us and our place in the sun. We all know it is more than a threat. It is fast becoming a reality that strong competition from abroad is increasing its overall production with the intent of surpassing us in 10 years in industrial production. What are we going to do to prepare to meet this competition? Reclamation most assuredly must be

among our plans to increase our agricultural production and stand ready to meet the world on whatever competitive offensive is made against us. But States rights to use our streams unhampered by federalizers is equally as important.

While these hearings may not be directly concerned with water rights legislation, we in Idaho are more concerned over this subject at the moment than in whether we shall have abundant water in the future. We feel that we are assured of abundant water as long as we have States rights pertaining to use of this water. We feel it is extremely important that we impress upon this committee the fact that Idaho agriculture could be in more danger from a loss of water rights than from any apparent danger we may face from loss of water itself. If the State has abundant water and cannot use it under a new interpretation of States rights, we surely would have no need for further reclamation projects. Water without the right to use it for the best interests of Idaho is as valueless as though the water did not run through the State. In this respect we should like to call to your attention our belief in the need for passing Senate bill 1416 or House bill 5555, which are Farm Bureau's water rights bills. The Justice Department's water rights bill, S. 851, is not acceptable to Farm Bureau, because we feel it does not meet the needs of the State and the Nation.

Hon. David S. King, U.S. Representative from Utah, sometime this year stated in the press:

> Every Utahan knows that one resource, above every other, is the key to the growth and development of the State. Without it, blossoming Utah industry would never reach full bloom. That resource is water.

Of course, the same statement can be used in reference to Idaho agriculture—and to the development of the entire State. We must develop Idaho agriculture, and other development in the State will keep pace. In other words, all we need is abundance of water and especially the assurance that the Federal Government will start recognizing once more the laws of the States pertaining to water rights under their constitutions.

Idaho's Congressman Hamer Budge this year testified before the House Committee on Interior and Insular Affairs, saying:

> It is my feeling that the Congress has been remiss for a great many years in not doing something in spelling out what has become a no-man's land in this field of conflict between the Federal Government and the States with regard to water rights.

Representative Budge's bill before the House, with which we agree, states that—

> the United States shall sue and be sued in the State courts in all matters pertaining to acquisition, determination, or exercise of rights to the diversion and use of water and such suits shall not be removed to a Federal court upon petition by the United States.

We concur in another statement of Representative Budge that—

> litigation between an individual and the U.S. Government should be on the same basis as litigation between individuals.

Representative Gracie Pfost, of Idaho, concurring with Representative Budge, said:

> Water rights in Idaho are considered just as precious as gold, or more so, because it is so very important to the growth of our State.

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Representative Pfost said Idaho has a tremendous water potential and she welcomed the efforts of Representative Budge in helping erase the shadow that has been cast over the State's water rights by recent court decisions. Stressing the need for legislation clarifying water rights of the States, Representative Pfost said until the *Pelton Dam* case Idaho had felt quite secure insofar as its water rights were concerned.

Representative Budge was asked how he accounted for this trend of the Federal Government to disregard States water rights. He replied that he felt it just followed along with the federalization that is taking place in a great many fields.

We cite these statements of our Representatives in the hope that we may show we are not alone in our concern over our own State's water rights. Until *Pelton Dam*, *Santa Margarita*, *Navy* v. *Nevada*, and other cases, we had little evidence to prove the basis of our concern. When Idaho, almost wholly, opposed Hells Canyon Dam, its backers said we had no basis for our fears, that our water rights were in no jeopardy. After these celebrated cases, in which the Federal Government's agencies and the U.S. Supreme Court itself ruled against State laws in the matter of longstanding water rights under their constitutions, opinions changed quite fast in favor of new laws to protect States rights. And it may be just coincidental that after these decisions shocked the 17 Western reclamation States, Hells Canyon almost suddenly became a dead issue. There was no longer any doubt in most people's minds that our water rights in Idaho, especially on the Snake River, would have been in jeopardy with a Federal project to preempt our water rights.

This matter is far from settled. Constitutional lawyers feel, as does Mr. Budge, that States water rights will never be secure again until we have an amendment to the Constitution of the United States clarifying the commerce clause and defining "navigability."

In this respect Representative Haley, of Florida, said:

> I think that is something we must do if we are going to maintain this great Nation of ours.

He further stated:

> I am glad to see so many of the people from the reclamation States beginning to get alarmed about the constant encroachments of the Federal Government on the rights of the States.

In his testimony before the committee hearing, Matt Triggs, assistant legislative director, American Farm Bureau Federation, said:

> We favor legislation to require Federal agencies to comply with State laws relating to the use of water and to respect private rights to use water established by State authority. The right to use water is a property right which should not be taken by any person without due process of law and adequate compensation.

We wish to restate our belief that Idaho is in more difficulty from loss of water rights than from loss of water itself, and that this fear accounts for our stressing the need for legislation to assure water rights under State law. We repeat that water itself running through Idaho is not enough to assure our production of abundant food and fiber. If Federal law preempts the rights of Idaho to use the waters of its streams and to that underground, the water might as well not run through our State as far as we are concerned.

Other testimony from Idaho will bear directly upon reclamation in water resources activity, and Farm Bureau has felt our place is to dwell upon the State's right to water use. Point No. 3 of the information desired by the Senate select committee calls for—

any other information believed to be helpful in considering water resources policies for the future.

In this respect Farm Bureau believes most certainly that water resources development depends upon water rights development in the several States.

Mr. Triggs, presenting American Farm Bureau policy as laid down by a cross section of its 1,600,000 farm family members, reminded the committee that in 1959, 19 State legislatures approved petitions urging the enactment of legislation to reestablish the historical rights of the States to control of most water within their own boundaries. He said:

The present uncertainty jeopardizes long-established rights. By a process of gradual attrition the security of the rights of millions of people and thousands of businesses and communities, in the continued use of water has been subordinated.

House bill 5555, Mr. Triggs pointed out, would—

buttress these rights by reaffirming historical congressional policy that State law, and private rights to use water established under authority of State law, are valid and will be respected by Federal agencies.

Charles C. Butler, Director of Land and Water Use, American Farm Bureau Federation, expressed our sentiment, when testifying before the House committee, he said:

Water users need more adequate protection of investments, more specific rights of use, and more legal and administrative procedures to develop, conserve, use, and protect the right to use water resources.

For instance, a State such as Idaho, in the development stage, will make progress more rapidly if prospective investors can be assured of the State's water rights in the years to come. Renewed respect for State laws by Federal agencies is a prerequisite to development of agriculture and industry in Idaho. One ties in with the other: If agriculture is hamstrung for want of freedom to use the water within the State, industry also will be held back. Investors would not want to put capital into a State that could hardly survive without free use of its water as controlled by State law. That is Idaho's position at this time.

Mr. Butler has said:

Water right and water problems are not confined to the 17 Western States. In recent years the 31 Eastern States have been forced to take a new look at water problems and water rights policies. In these States the public is fast becoming aware of problems of water use, the growing need for great quantities of good quality water and the need to establish and protect rights to the use of water in a rapidly expanding economy. State legislatures and private organizations are assuming greater responsibility for the development of adequate water legislation to meet these needs.

In expressing his belief in the need for legislation to protect the States in their water rights, Mr. Butler said:

It is not sufficent to rely upon the administrative agencies of the Federal Government to exercise discretion to avoid harmful consequences of their actions. The security of these rights should be buttressed by law, and not by administrative discretion.

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The Idaho Farm Bureau Federation concurs 100 percent with Mr. Butler in his statements. Every year our delegates assembled urge Congress to take necessary steps to protect the State of Idaho from encroachments of Federal agencies against States rights.

We thank the committee again for the privilege of presenting the opinions of the members of the Idaho Farm Bureau Federation.

A representative of the Oregon Farm Bureau Federation present at this hearing informs me that the Oregon Farm Bureau Federation concurs in this statement that I have just given.

Senator Kerr, if I might just add a brief statement, last evening I met with a group of water users in the lower part of the Boise project. They are members of the Canyon County Farm Bureau Federation. These water users will be directly affected by the Guffey project.

The CHAIRMAN. By what?

Mr. SANBORN. The Guffey project. They object to the change. They feel their views should be given full consideration before any action is taken to authorize such a project. They wanted me to call your attention to the resolution passed by the voting delegates in the last American Farm Bureau Federation convention, which resolution then became the Farm Bureau policy for 1959. It reads in part:

> The productive capacity of American agriculture has outrun effective market demands, resulting in surplus production and depressed prices. We therefore recommend that irrigation phases of Federal multipurpose reclamation projects which would bring new land into production be postponed until needed. We recognize that supplementary water supplies are needed to stabilize agriculture in many areas.

Personally, I support an orderly continuation of the reclamation program, especially since it takes many years from the inception of a project to ultimate realization.

I thank you.

The CHAIRMAN. Senator Dworshak, the committee will continue in uninterrupted session until 3 o'clock if that much time is needed to hear the witnesses who are scheduled to appear.

One of us will go to lunch while the other continues the hearing and then the one going first will return and stay through the hearing while the other goes to lunch.

I thought you might want to know that and the witnesses might want to know that, but the hearing will terminate at 3 o'clock.

Senator DWORSHAK. Thank you.

We will now hear from George Crookham, a member of the State legislature, on Federal-State relations in water development.

STATEMENT OF G. L. CROOKHAM, JR., MEMBER OF THE IDAHO STATE LEGISLATURE

Mr. CROOKHAM. Mr. Chairman, gentlemen of the Senate committee, ladies and gentlemen, there will be 45 percent more Americans to feed in 1970 than in 1950—a population increase of some 69 million. This is a jump from the 1950 census of 151 million persons to an estimated 220 million in only 20 years.

Applying this percentage to the States of Idaho, Oregon, and Washington, there is an increase of 3.02 million—from 4.5 million in 1950 to 7.52 million in 1970. Basic economics assumes it takes an acre of irrigated land to feed one American for 1 year.

These three States are overproducers in American foodstuffs. But, if these States are to meet their obligations 20 years hence, some 3.02 million acres must be hewn from the desert and mountains to accommodate the Nation's development. Agricultural know-how, however great, cannot match the economics of new land. Because of the ever expanding use of agricultural lands for other purposes, the Pacific Northwest has a real responsibility to America's dinner tables.

The need for water programing is now, but not in one gigantic installation. Developments should be relative, meeting the forecast demands of the American dinner table meal by meal and year by year. And that need should be appraised from where best the raw material, in this case water, can most easily be obtained in the Pacific Northwest. A reclamation development, erected without an assured supply of water, is folly.

Recommendations, then, on a pattern of water development for Idaho should be:

1. Complete Burns Creek as currently before Congress.
2. Enact the Pacific Northwest account, S. 1388.
3. Finalize the Guffey project for stage development.
4. Press for project authorization of the Garden Valley Division as outlined by the Bureau of Reclamation.
5. Proceed with authorization and construction of the Garden Valley Division as outlined by the Bureau of Reclamation.
6. Proceed with authorization and construction of Bruces Eddy.
7. Request Nez Perce as a replacement for High Mountain Sheep and Lower Canyon.
8. Unless better alternatives develop on Enaville, Penny Cliffs, Asotin, let these be authorized on the Congressional adoption of the new "308" report.

The denominator of economic feasibility of water development should be derived from ability of the water user to repay, coordinated with unassigned power revenues. The last of the low-cost reclamation projects has been built.

The amount of public funds spent for projects under a power-water user plan bears an economic limit. Plans, such as the Pacific Northwest account, S. 1388, are investments in America. Congress is still the boss, saying when, where, and how reclamation projects shall be built. Mr. Public's cash is returned with interest.

The formula of reclamation by private development rests with the ability of the farmer to shoulder the entire costly enterprise, a field that is already well exploited.

Who can best serve the most people, justly—Federal, State, or private contingents?

That a conclusive and wholly accurate per acre cost comparison between past and present and future reclamation projects can be promulgated is quite untrue. The inflated dollar, coupled with land types, growing seasons, and crop varieties, leaves many chuck holes. Each project is an individual. Under Federal projects per acre costs are assigned objectively—simply, can a man farm a decent living and pay his bills?

The beneficial use of water in irrigation planning is becoming increasingly complex. This is the time to assure ourselves that Idaho's land and water resources will be properly developed in keeping with

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the national need. In this midcentury history may well record us as a hydropower-happy generation, defaulting to the more important long-range food needs of an explosive population.

Mr. Chairman, may I freewheel for 3 minutes of my time?

The CHAIRMAN. How is that?

Mr. CROOKHAM. May I freewheel for 3 minutes of my time?

Mr. CHAIRMAN. You certainly may, sir.

Mr. CROOKHAM. Mr. Chairman, as a citizen of Idaho, I certainly want to apologize for the presentation of Mr. Cooper's organization in taking some 30 minutes to hang a "Do not disturb" sign on the State of Idaho.

As a citizen I also want to apologize, sir, for Farm Bureau's position in adding crepe paper to that message.

Now, we are talking about policies, sir, and we are talking about money. These projects shall be built but the man on the farm shall be entitled to a decent living to pay his bills. The cost above that is the problem of this whole situation. We in Idaho will not proceed until we take an objective look at the financial situation. We think, I think, that our revenues from either private or public sources must contribute as a paying partner to this program.

That was not brought out in Mr. Cooper's testimony nor was it touched on in the Farm Bureau testimony.

I think, sir, that is the crux of the whole policy, where is the money coming from and how is it going to be used and when.

Thank you very much.

The CHAIRMAN. In other words, you take the position that the multipurpose project is built having as its primary purpose providing water for irrigation, that the power revenues incidentally produced by the project should not only be used to pay for power installation but also to complete the overall payment of the reimbursable charges of the projects?

Mr. CROOKHAM. Correct, above the ability of the water user to repay. We would like to pay our own way insofar as possible.

The CHAIRMAN. I speak for no one but myself, but as an individual Senator, I am happy to tell you that I fully agree with the position you have just taken.

Mr. CROOKHAM. Thank you, Senator.

Senator DWORSHAK. May I say I concur, too.

Mr. CROOKHAM. Thank you, Senator. We are a power rich State. We have been a hydropower happy generation and fought about that a long time, refusing to meet squarely and forthrightly when and how it would be financed on the reclamation procedure.

I think, sir, if I may add one thing more on this water rights. I have taken all the time but may I speak on that, too?

The CHAIRMAN. Yes, sir.

Mr. CROOKHAM. You took an oath to support the——

The CHAIRMAN. I sure wouldn't want to further abbreviate the briefest remarks that have been made.

Mr. CROOKHAM. You took an oath to support the Constitution of the United States and so have I as a legislator in the State. We in the State of Idaho exist because of that Constitution.

It has even been suggested today that an amendment to that Constitution be set forth to absolutize water rights. I think, sir, that is asking too much.

I will go back to the days of Ben Franklin when he said that a despotic government will prevail when the people become so corrupt as to require that. As long as our Government is staffed with men of honorableness and decency and of high courage, such as you, I feel no apprehension that we cannot work our problems out without going to the resort of trying to change that fine document that stood the test of years.

The CHAIRMAN. Thank you very much.

Senator DWORSHAK. The next witness will be A. J. Teske, Idaho Mining Association, on mining uses of water.

STATEMENT OF A. J. TESKE, SECRETARY, IDAHO MINING ASSOCIATION

Mr. TESKE. Mr. Chairman, gentlement of the Senate, my name is A. J. Teske. I am secretary of the Idaho Mining Association, residing in Boise, and representing most of the active mining operations in the State today.

At the outset let me assure you that Idaho's metal mining industry, although somewhat battered and sore beset by adverse Government policies during the 10 years or more, is by no means dead or dying and that it confidently expects to regain its former status as a bulwark of the national economy and security when the mushrooming demand for its products in the years ahead brings into true focus the full impact of those policies on economic growth and progress.

It is in this spirit of confidence that I appear before this committee today to review briefly, for the record, the mining industry's historic role as a water user in the development of the State's economy and to urge upon this committee extreme caution in considering any proposals that would change the basic ground rules for State and local autonomy in determining the maximum judicious use of water resources consistent with the broad demands of the public welfare.

Historians are in general agreement that it was the presence of mineral resources which brought about the settlement of Idaho and nearby neighboring areas. With the discovery of gold at Pierce in the north central part of the State nearly 100 years ago, in 1860, came the first rush of settlers and it was this embryonic mining industry that sustained them and their followers until agriculture and other industry became established.

Gold was the basis of the first mining operations but with the gradual depletion of the rich placer deposits came the discovery of rich lead and silver deposits in various parts of the State and before the turn of the century many large ore deposits had been found and were being worked.

From the beginning, even before the establishment of the territorial government in 1863, the reasonable use of public streams for mining purposes was permitted in virtually all mining districts by custom, usage, and law.

When the Idaho constitution was adopted in 1889 it conferred, in article 15, the specific preference right to divert and appropriate the unappropriated waters of any natural stream to beneficial use. Part of that article stated as follows:

> And in any organized mining district those using the water for mining purposes or milling purposes connected with mining shall have preference over those using the same for manufacturing or agricultural purposes.

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Thus, it was recognized by the members of the constitutional convention even in those early days, that Idaho's abundant water resources were literally the lifeblood upon which its growth and development would depend, and accordingly, they inserted into the constitution itself the foundation of a sound, flexible State water policy.

An important part of that policy was the priority rating as a water user accorded the mining industry, and over the years their foresight has paid off in the development of a minerals industry that has always been and remains today one of the main arteries in the State's economic bloodstream.

In the utilization of water resources, mining and related treatment processes has traditionally occupied the role of a water user rather than a water consumer. In other words, a large percentage of the water supply necessary for the operations—dredging, milling, et cetera—was eventually returned to the original supply.

In many instances, however, the water returned was somewhat deteriorated in quality due to the presence of sedimentation and milling slimes, and many of the industry's problems over the years have arisen over the pressures exerted by some segments of the public for stricter government regulations to maintain the purity of water resources.

In these situations the industry has traditionally advocated and practiced a policy of maximum cooperation to alleviate the problem on a voluntary basis, within the framework of economic feasibility as dictated by the local situation, and it has generally been possible to harmonize the conflicting interests for the overall public welfare under the wise and flexible State water policy.

In the Coeur d'Alene district of North Idaho, for example, the mines banded together and spent hundreds of thousands of dollars on a dredging installation which removes settled slimes and sediments from the streambed below the mining operations, so as to minimize the flow of this turbidity into Lake Coeur d'Alene. Bradley Mining Co. also went to great expense at the now-defunct Yellow Pine antimony mine in Valley County to prevent waste slimes from discoloring the clear waters of Meadow Creek, and the East Fork of the South Fork of the Salmon River.

Dredging operations presented an especially troublesome problem not only of stream sedimentation but also streambed disturbance, but a means of control was found at the State level in the dredge mining initiative.

For the past few years Porter Brothers Corp. has been providing a splendid demonstration of the effectiveness of sedimentation control techniques under the dredge mining control act at its strategic metals dredging operation at Bear Valley. The control system involves diversion of the main stream around the dredging area. Water use is limited to the minimum necessary for floating the dredge and for washing and jigging. Turbid waters are eventually channeled through settling ponds and a water treatment plant where the precipitation of sediment as accelerated through the use of commercial reagents. Water returned to the stream is as clear as that removed—sometimes clearer, when the main streambed is roiled by natural erosion. Dredged areas are leveled and reseeded after the mineral value has been removed. Where possible, top soil is pushed aside and

redistributed over the leveled surface before reseeding. It has been found that within a year or two the reseeded areas have a good cover of vegetation superior in grazing value to the original weeds and brush. At any rate, cattle in the area seem to prefer the new young growth to the undisturbed old vegetation.

This brief review of the mining industry's progress in working toward a solution of its water-use problems provides ample evidence of its desire and intent to cooperate fully with all other interests—government, industrial, agricultural, and private—in attaining the maximum possible utilization of Idaho's important water resources.

In establishing this record of responsible stewardship the industry has contributed abundantly not only to the progress of Idaho but also to the economic welfare of the Nation.

Over the past 95 years, for which at least partial records are available, the mining industry in Idaho has produced at least $2½ billion worth of new mineral wealth, including more than 6,800,000 tons of lead, nearly 700 million ounces of silver and more than 8 million ounces of gold.

In recent years the trend in metal production has been decidedly downward, due largely to Government policies that have stimulated the development and exploitation of foreign ore deposits and encouraged the entry of these metals into the American markets at prices which domestic mines, with their higher wage and cost structures, cannot meet. During the past 10 years an important segment of Idaho's mining industry has been literally wiped out by the pressure of oversea competition. Victims were the Bradley Mining Co.'s antimony mining, milling and refining operation at Stibnite, which was by far the largest domestic producer; also the same company's Ima tungsten mine at Patterson, together with all other tungsten producers; and, in the past year, the Calera Mining Co.'s cobalt mine at Cobalt, which also was the Nation's largest producer of that strategic metal. Gold mining enterprises, of course, were driven out of business earlier, by the steadily increasing squeeze of inflated costs against a depression-level Government price.

However, the future of Idaho's mining industry is anything but bleak.

Base metal producers, as stated before, are confidently anticipating a substantial improvement in marketing conditions as more enlightened Government policies are adopted and world demand keeps pace with the population and economic growth.

Then, too, there are the tremendous resources of known mineral occurrences which may become important economic assets as a result of technological advances in processing and industrial usage. In this category are the thorium deposits of Boundary and Lemhi Counties; the rare earth and black sand placers of Bear Valley and Long Valley and elsewhere, with their columbium-tantalum, euxenite, zirconium, titanium, garnet, and monazite values; the veryllium values in the extensive pegmatites; the fluorspar deposits of Lemhi and Custer Counties; and countless others. The list would not be complete without some mention of the vast remaining low-grade deposits of gold which could readily become of great economic importance to Idaho if and when the managers of our monetary system comes to realize the disturbing significance of the drain on our gold reserves that has been occurring over the past several years.

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All of these existing and potential mineral resources are water users—either in their mining or processing operations or both. Their water needs must be met if they are to contribute their full increment to the State's economic progress.

The real "sleeping giant" in Idaho's promising minerals future, however, is the tremendous reserve of unexploited nonmetallics—the vast deposits of phosphate, clay, silica, diametaceous earth, limestone, et cetera. The awakening of this giant awaits only the development of the necessary processes and markets to make their utilization economic. And with this awakening will come a substantial increase in consumption of water by the industry.

Substantial enterprises utilizing the State's phosphate, clay, silica, and other industrial minerals have already been established, in relatively recent years, and they have in large measure taken up the slack occasioned by the slump in metal mining.

The big push in the nonmetallics field, however, lies in the future and we are even now on the threshold of some of these new developments.

For example, plans are now on the drawing table for a beneficiation plant to upgrade to economic quality some of the vast low-grade phosphate deposits. The plant under consideration would be capable of processing about 2,000 tons of ore a day and would require at least 2 tons of water for every ton of ore. When it is recalled that the volume of these reserves available for upgrading is in the range of 30 to 50 billion tons, it becomes obvious that the potential requirements for Idaho's water in Idaho are tremendous.

Another example involving increased water requirements for processing of industrial minerals is the new plant which is now being constructed near Bovill to produce a variety of clay and silica products.

This plant will be a water user rather than a water consumer, but there will be a normal loss of 20 to 30 percent of the volume before the used and reused water is returned to public use in the streams.

Beneficiation of the State's extensive clay deposits for use in the aluminum industry is also under study and could involve greatly increased water use in the State.

These potential new demands for Idaho water in Idaho are by no means long-term projections far into the future. If present forecasts of the growth and development of the West are even partially accurate, some of these increased water requirements will be realities within a very few years. The timetables of progress in these new fields are constantly being compressed. One large phosphate enterprise, for example, has virtually completed in half the time allotted a 20-year program outlined only 10 years ago.

Apparently the expanding national economy is making demands upon Idaho's vast storehouse of mineral resources at a rate that exceeds even optimistic expectations. Meeting the water needs of this accelerated development presents a problem of considerable magnitude, but it will be only the initial challenge of a chain reaction.

The speedup in resource development will require additional workers, and, as greater supplies of raw materials become available, they will attract new processing and manufacturing plants which seek the advantage of proximity of their sources of supply. These new

industries will again expand the market for labor. The increased population, in turn, will need additional community facilities—schools, stores, shops, and services of all types—bringing in still more new workers and their families.

Thus, demands upon the available water supplies will snowball in geometric progression, until the direct requirements for mineral resource development represent but a small fraction of the total increase in water use and consumption.

In summary, then, the overall outlook for mining in Idaho seems to leave little doubt that it will require much more intensive use of the State's abundant water resources in the years ahead. Only by the assurance of adequate supplies to meet these increased requirements will the full economic potential of the State's mineral resources be realized.

This assurance, the mining industry believes, can best be provided by preserving intact the traditional policy of State control of water resources. Removal of that control to authorities far removed from the local scene could easily stifle and might even prevent the mining industry from making its full contribution to the State's economic growth and progress and to the Nation's mounting requirements for metals and industrial minerals.

In conclusion, I wish to thank you, Senator Kerr, and all your committee members for affording me the opportunity to appear here today to present the Idaho mining industry's views on water resource utilization.

The CHAIRMAN. Mr. Teske, I want to congratulate you on a very fine statement. I couldn't be in more complete agreement with your statement that the policy of nurturing oversea competition where there are vast reserves of ore, mineable with very low cost labor being developed for importation into this country is a problem so serious that only economic blindness would have permitted it to develop to where it is today and only economic blindness will permit it to continue.

I was quite interested in your reference to the drain on our gold reserves and some suggestion to be made with reference to the vast remaining low-grade deposits of gold. In what form?

Mr. TESKE. Placer gold.

The CHAIRMAN. Placer gold?

Mr. TESKE. Yes.

The CHAIRMAN. Does it occur simultaneously with other minerals, the mining and production of which is necessary to make the whole operation economically feasible?

Mr. TESKE. In some cases with the black sand and rare earths but in many cases nothing else with very great value. The gold is the principal recovery item.

The CHAIRMAN. What is your thought as to the plan best adopted to encouraging the development of an industry to utilize those reserves?

Mr. TESKE. As far as the gold market is concerned, the mining industry feels at the present time if they would just permit the gold to seek its natural level and to stop the sale of Treasury reserves to the industry that there would be a natural adjustment in price, and that the miner could benefit. If these were an increase in price, many

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UNIVERSITY OF MICHIGAN LIBRARIES

of these things would become economic which are uneconomic to operate today.

The CHAIRMAN. Do you know about how much of the gold reserves of the Nation are being fed each year into the industry which produces products in part or entirely from gold?

Mr. TESKE. I do not know that, Senator Kerr; no.

The CHAIRMAN. I wonder if there is any authority in the room that could put that information in the record. My impression is that it is in the neighborhood of $125 to $150 million a year, and that the Nation, in supplying that demand or market, not only is gradually depleting its own gold reserves but doing so at an entirely fictitious price, not only below the world market but entirely unrelated to the cost of what would be required to replace it.

As I understood your testimony you were presenting a similar viewpoint.

Mr. TESKE. That is correct, Senator. We believe that the actual sale of gold to private users today at $35 an ounce constitutes a subsidy, because you cannot produce gold in this country——

The CHAIRMAN. Constitutes a gift.

Mr. TESKE. A gift, or subsidy, to the user of it.

The CHAIRMAN. It constitutes a gift of a resource of which the Nation's supply is limited and which supply is being depleted in many ways, the most needless one of which, I think, is the one to which you referred, and I personally thank you for putting it into the record. So far as I am concerned, I would welcome an effort on the part of the representatives of the States that are directly concerned to eliminate at least that unjustified subsidy of the domestic gold market and that unjustified drain on the Nation's gold reserve.

Mr. TESKE. We of the Idaho Mining Association are on record as opposing it at our last convention and the American Mining Congress went on record in Denver just recently. They have taken a similar stand.

The CHAIRMAN. Are they limiting their activities to issuing of resolutions?

Mr. TESKE. It is as far as it has gone so far, Senator, but I trust that will not be an end.

The CHAIRMAN. I would like to light a fuse somewhere. It would not be too long, and when it reached the designated spot it would create a reaction that would produce more than just resolutions.

Mr. TESKE. We will try to do that, Senator. Thank you.

The CHAIRMAN. Thank you very much.

Senator DWORSHAK. The next witness is Blaine Stubblefield, to discuss navigation and boating.

STATEMENT OF WILLIAM CARSON, WEISER, IDAHO

Mr. CARSON. Senator Kerr, and members of the committee, Mr. Stubblefield was called out of town. My name is Bill Carson. I reside at Weiser. He asked me to present his testimony here today.

The CHAIRMAN. Reside where?

Mr. CARSON. Weiser, Idaho.

The CHAIRMAN. Why?

Mr. CARSON. Because that is one of the best places in the country to live. That is the reason.

The CHAIRMAN. I just wanted to know how you felt about it.

Mr. CARSON. We thought it is so good, Mr. Stubblefield is in Los Angeles telling the people down there about it.

The CHAIRMAN. You think it is good he is away from us?

Mr. CARSON. No. He is coming back. He is down there with the Governors telling the people down in Los Angeles about our water resources and what the advantages are in Idaho over California. [Reading:]

(1) Water sports are by far the leading recreation of tourists, whose travel and trade is among the Nation's two or three biggest industries.

(2) Idaho's opportunity in tourist business is obvious without further exposition. To get the tourist business we must have water sports facilities, mostly boating, skiing, and swimming.

(3) Idaho is seriously lacking in water sports accommodations and your committee is urged to do all it can to meet this problem.

(4) Specifically we point out the present urgent need for boat and recreation facilities at Palisades Dam Owyhee Reservoir, Minnedoka Wild Life Refuge, Brownlee Lake, and many others on which I am not informed.

(5) Most important of all waterways opportunities in Idaho is Brownlee Lake, Oxbow Lake, to be formed in 1961, and Hells Canyon Lake, which will fill in 1964. These pools total 93 miles of the most spectacular boating and fishing waters in the United States.

(6) This great waterway system needs a city waterfront having all travel accommodations, and all goods and services for the boating public which is already growing at a rapid rate. The headwater of Brownlee Lake is 8 to 15 miles downstream from Weiser depending on the drawdown.

(7) These 8 to 15 miles include three or four shoals which are not navigable in low river flow season. We have pending with the Corps of Engineers an application for the channelization of these three or four shoals, so that the 93-mile waterway could have its necessary municipal waterfront at Weiser.

(8) A survey and report on our application has been approved by the Corps of Engineers and by Congress, but there has been no action for lack of the requested $25,000 appropriation to make the survey.

(9) We ask your committee to recommend this appropriation be set up by the next Congress. This project will be too long delayed at best.

(10) Please consider that we are not merely asking that the Government do something for this community. The benefit will accrue to all western Idaho, and to the entire vacation public of the Nation.

(11) Furthermore, we are now engaged in the construction of Olds Ferry Highway on the Idaho side from Weiser down to Olds Ferry on the headwaters of Brownlee Lake. This work is not receiving any Federal aid, and only the survey is contributed by the State. The construction work is being done by the Western School of Heavy Equipment Operation and it will be completed sometime next year. This route is the nucleus of a water level highway which inevitably will extend down the Snake River. Rock Island Gypsum Co. has completed, at its own expense, an additional 11 miles of this route downstream from Huntington Bridge.

(12) Let us emphasize further, concerning the Hells Canyon Waterway, that it will serve not only local recreation but will open navigation from the Columbia and the ocean nearly 700 miles through Hells Canyon, and through Treasure Valley, to Swan Falls south of Boise.

(13) All dams in the Colorado and Snake River upstream to Lewiston have, or will have, navigation locks. Idaho Power Co. is providing ramp and vehicle portage for boats past its three dams, upstream and down, in the Hells Canyon reach.

(14) Your speaker is now preparing for a boat trip next spring from Treasure Valley through Hells Canyon to Portland, to demonstrate this region's new accessibility by navigation from the Columbia system.

I congratulate the committee on its initiative in surveying the Nation's water resources and particularly for holding this session in Idaho where the opportunities are so great and the need for development is so urgent.

Respectfully submitted.

BLAINE STUBBLEFIELD,
Weiser Chamber of Commerce.

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Senator DWORSHAK. Mr. Carson, do you have a brief statement you want to make on behalf of the Idaho Flood Control District No. 3?

Mr. CARSON. Yes, I do, Senator.

Senator DWORSHAK. Take a few minutes at this time.

Mr. CARSON. It is a very short statement. My name is William M. Carson. I am a farmer and reside at Weiser, Idaho. I am chairman of the Idaho Flood Control District No. 3 comprising the Weiser River and its tributaries.

First, I wish to thank you for holding this hearing in Idaho and thank you for the opportunity of appearing before you.

Secondly, I wish to point out that Congress through the years has been negligent in paying attention to the needs of small watersheds and the building of small projects. I realize that Congress cannot give the time and attention needed to act wisely on every little project. An attempt to set up rules and specifications to give assistance to small reclamation jobs was made with the Small Projects Act, but its requirements are such that it is seldom workable. As a result, big projects costing many million dollars have and are being built, but it is most difficult to get approval and appropriations for small projects.

The result of this policy or this condition in Weiser watershed has been not only a failure to utilize the water resources of this valley but also to permit one and sometimes two floods a year, each one depleting our soil resources and doing property damage.

The Weiser River Basin (about 1,700 square miles) needs both reservoirs and river channel work to properly use and control its waterflow.

According to the Corps of Engineers justification report of December 1, 1954, serious floods have occurred in 22 of the last 64 years. There have been one or two floods every year since 1954 except so far in 1959.

I might state here that in 1955 we had a flood there that caused almost $300,000 damages.

In the past 5 years, the Corps of Engineers have spent about $190,000 for flood control, and residents have spent about $90,000. This does not include expenditures made that were not reported to the flood control district.

We think this money was spent wisely and was very necessary. Certainly many more dikes and much channel straightening must be done, but the best place to control floods is at their source—that is why reservoirs are so vitally needed. Weiser is the only uncontrolled major river in southwest Idaho and is the wildest of all rivers in this area. Reservoirs that have either been surveyed or are now being investigated, all of which have both flood control and reclamation benefits, are:

(1) Increasing size of Lost Lake Reservoir to provide supplemental water for Council Valley. Attempt was made by Ellis Snow of Council to set this project up under Small Projects Act, but the act requires that farmers pay in cash the cost of engineering the projects which was estimated at $35,000. If this cost could be part of the loan, land owners would approve, but would not put up the money—cash on the barrelhead—without knowing whether the loan would be approved.

(2) Bacon Valley or Goodrich Reservoir site proposed to store more than 250,000 acre-feet, which would take the peak off floods originating

on all large tributaries, except Little Weiser River. It would also provide water for 14,000 acres new land and supplemental water for 3,000 acres. The Bureau of Reclamation has this summer made some studies but no report has been made.

The fact of the matter is the Bureau of Reclamation has made a complete survey of this western river watershed but it has been over the last year and a half but their report is not out yet.

(3) Increasing the size of Ben Ross Reservoir and increasing size of diversion canal from Little Weiser River to the reservoir. This would go a long way toward controlling floods on this river, the principal tributary to main Weiser River. The Bureau of Reclamation has also made studies of this proposal.

(4) Mann Creek project, which has been introduced in Congress, would control floods on this important tributary and provide supplemental water for 5,060 irrigable acres and 595 new acres.

There are a total of 14 reservoir sites that have been deemed practical by engineers in the Weiser watershed which would store an estimated 439,300 feet.

The Weiser Basin has unused water resources of an estimated 590,000 acre-feet each year. Irrigation potential for new land at scattered locations are 20,000 acres, and there are 12,000 additional acres that need more water.

Landowners cannot bear the entire costs of these projects, even over 50- or a 100-year loan period. The benefit of these projects would be more than to landowners only. The area as a whole and the State would benefit in a number of ways in addition to preserving our land for future generations.

In closing, I urge you to institute programs whereby the needs of smaller watersheds that require smaller projects are given careful consideration. The need for this work is now, before more damage is done—and before such valleys as ours suffer a repetition of what happened in the Tigris and Euphrates Rivers of the Middle East.

Senator DWORSHAK. Mr. Carson, you state that there are a total of 14 reservoir sites deemed practicable by engineers in the Weiser watersheds. Do you know whether any of these reservoirs have been recommended by either the Bureau of Reclamation or the Army Corps of Engineers as to feasibility?

Mr. CARSON. Their study has not been complete. At least their report is not out. I have a list of all those sites but I didn't include them in here because I didn't think it was probably necessary.

Senator DWORSHAK. Of course you understand until these reports are submitted to the Congress it would be almost impossible for Congress to initiate action providing for the construction of any of these projects.

Mr. CARSON. That is right. I assure you that as soon as this report is out we will present such a report to you.

Senator CHURCH. Mr. Carson, are you familiar with the bill Senator Dworshak and I submitted on the Dry Creek project?

Mr. CARSON. Yes, I am.

Senator CHURCH. Are you familiar with the amount of project cost to be borne by the landowners?

Mr. CARSON. No, I am not familiar with that.

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Senator CHURCH. You know, however, that a sizable proportion of the cost of the project is allocated to power revenues to be derived from the Federal power installation downstate?

Mr. CARSON. That is correct. They expect to have a vote down there in the near future regarding that and see if the farmers will go along with the cost they are supposed to put up.

Senator CHURCH. That project would have very substantial benefits, would it not?

Mr. CARSON. It would have some benefits on flood control of the Weiser River on the lower part.

Senator CHURCH. Principally, it would give supplemental water. I note only 590,000 acres of new lands.

Mr. CARSON. That is right.

Senator CHURCH. There is real need for supplemental water there.

Mr. CARSON. Yes. There is a very fine valley that covers and they are very short of water. They are very productive.

Senator CHURCH. Thank you.

Senator DWORSHAK. The next witness will be Tom Roach, president of the Idaho Power Co., who will discuss hydroelectric development.

STATEMENT OF TOM ROACH, PRESIDENT, IDAHO POWER CO.

Mr. ROACH. Mr. Chairman and members of the Senate committee, because our statement which was intended to brief the committee on what is being done with water resources in the development of power is in your hands, my comments are going to be extremely brief, merely for the purpose of directing your attention to certain special features which may be of some interest.

The CHAIRMAN. The entire statement will be made a part of the record.

(The prepared statement referred to follows:)

STATEMENT BY IDAHO POWER CO.

Your committee is engaged in surveying the water resources of our Nation and today is receiving information with respect to the present status of water resources in the State of Idaho and recommendations for future development.

Idaho Power Co. appears before your committee as the largest private water resource developer in the State of Idaho, with the thought that, from its background and experience in waterpower development, it can offer some worthwhile and constructive suggestions for your committee to consider in its investigation of the water resources of this area. Before making these suggestions the company feels that a statement of Idaho Power Co.'s program and activities in water use and development should be presented to give you an informed background with respect to water resources development.

The Idaho Power Co. is a privately financed electric service company and is not financially affiliated with any other company, holding company, or system. It is owned by 14,476 shareowners, 93 percent of whom are individuals. The majority of the individual owners are women. Nearly one-third of the total shareowners reside in the State of Idaho.

Idaho Power Co. has been engaged in supplying electric power in southern Idaho, eastern Oregon, and northern Nevada since 1916. The company is the principal power supplier for 132,000 customers in an area primarily lying along and adjacent to the Snake River or its tributaries, the principal river of southern Idaho, and extending from the general vicinity of Blackfoot and Pocatello, Idaho, in the east to Baker, Oreg., in the west, and from northern Nevada in the south to Riggins, Idaho, and the Salmon River in the north. The major portion of the population served by the company lives in the irrigated areas along the Snake River and its tributaries, areas economically de-

pendent on the storage and utilization of water for irirgation and the continuation of a sound economic reclamation program.

The company's production of electrical energy is obtained solely from hydro installations located on the Snake River or its immediate tributaries. The company has 13 operating installations, extending from the American Falls powerplants in the eastern part of the State and continuing westward down the Snake River to the Brownlee hydroelectric plant located on the Idaho-Oregon border. In addition, downstream from the Brownlee plant, the company is building the Oxbow hydroelectric plant and will begin construction of the Hells Canyon hydroelectric development following completion of Oxbow. With the completion of Oxbow and Hells Canyon, the company will have a total peaking capability of 1,355,000 kilowatts. Construction of the varied hydroelectric developments has been carried on by the company in an orderly fashion, as dictated by the requirements and needs of the territory served by the company and the company has efficiently utilized the full available flow of water and fall in the Snake River to obtain the electricity necessary to serve and promote the economic prosperity of the territory. As a result of this orderly and progressive construction of facilities, the territory served by Idaho Power Co. has never experienced a shortage of electric power supply nor a "brownout," even though the percent of load increase on the company's system is one of the highest in the Northwest. With the construction plans already underway it is anticipated that the electric power requirements of the territory will be adequately supplied until about 1980. In addition, the company is continually investigating and considering additional sites and alternative sources of power that may be necessary to meet the needs of the area and the company will provide additional electric generating facilities as required.

Idaho Power Co., serving as it does the Snake River Valley area, has a deep and vital interest in the continuation of a sound economic program of water development. A preponderance of the population of this area is either engaged in some form of agriculture or receives benefits therefrom. Most of the area's agriculture uses irrigated land, and the farm customer, both for farm use and deep-well pumping, is one of the leading customers of Idaho Power Co. Because of the interrelationship between water development for irrigation purposes, the company's electric sales and the generation of electricity by the company, the company has a long-established policy of supporting and encouraging sound reclamation policies. The company believes that the continuing development of the Snake River Valley area depends upon the continuation of a sound economic program of reclamation of arid lands and the providing of needed supplemental water for those lands already under cultivation for which adequate water supplies are not presently available.

The company, as part of its continuing program of aiding irrigation and reclamation, has recognized that use of the waters of this area by other than irrigators should be subordinate to irrigation use. In accordance therewith the company has agreed that permits issued to the company for use of water for power generation include provisions that such use shall be subject to the depletion of the riverflow by upstream diversions and use of the water for irrigation. The provision contained in a number of the company's water permits is as follows:

"The rights herein granted for the use of the water, streambed, and other lands of the State of Idaho, necessary for the operation of the dam and reservoir, are subject to the condition that the project shall be operated in such manner as will not conflict with future depletion in flow of the waters of Snake River and its tributaries, or prevent or interfere with the future upstream diversion and use of such waters, for the irrigation of lands and other beneficial consumptive uses in the Snake River watershed."

In addition to the provision contained in the water permits, the company, at those projects where it was economically feasible due to terrain and land availability, has installed or made provision for the utilization by downstream irrigators of waters impounded behind the reservoirs.

The company, as part of its continuing effort to aid the reclamation development of the area, has cooperated with the U.S. Bureau of Reclamation. This cooperation commenced as early as 1923 with a contract between the company and the Bureau, relating to American Falls. Subsequent contracts were executed in 1934, 1950, 1956, and 1959, under which contracts the company delivers power for the U.S. Bureau of Reclamation to certain customers, purchases surplus power from the Bureau, and provides a supplemental source of power from

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company's own system to the customers of the Reclamation Bureau, in addition to the power available to them from Government installations. The 1959 contract with the Bureau of Reclamation provides for the coordinated operation of the Bureau plants with the company's system, with the result that the firm load carrying capability of the Bureau plants is increased nearly 30 percent without expenditure of additional funds by the United States. The existence of these contracts has not only saved the U.S. Government and its taxpayers the cost of building additional transmission and generating facilities, but has actually returned to the U.S. Government and to the State and local units additional money by virtue of the taxes paid by the company on such facilities.

The company, as evidence of its interest in continuing and promoting the reclamation development of the area, has provided electric power and energy used in developing over 310,000 acres of arid land since 1948. This arid land has been turned into highly productive irrigated lands by means of deep-well pumping installations. This development has been materially aided by the low irrigation rate provided by the company to its customers and the assurance of a source of adequate power supply.

An outstanding example of the company's interest in the development of the area and the multipurpose use of the waters of the Snake River is provided by the Brownlee, Oxbow, and Hells Canyon hydroelectric developments. These projects are being constructed by the company under license No. 1971 granted by the Federal Power Commission. At all three of these power developments the company also is using these facilities for the multipurpose development of the waters of the Snake River, including irrigation, flood control, navigation, recreation, and fish and wildlife conservation. As heretofore stated, the use of water for these projects is subordinated to the use of the waters for irrigation purposes, as set forth in the water permits issued by the State of Idaho. The company has made available, at its own expense, 1 million acre-feet of usable reservoir space for flood control purposes. This flood control storage during the flood season is subject to control and regulation by U.S. Army Corps of Engineers and is available for storage to alleviate and reduce potential floods downstream on the Snake River and Columbia River. The navigation benefits of these reservoirs are present in the pools formed behind the dams and downstream by the release of water from the Brownlee Reservoir. Recreational areas, parks, and boat landing facilities are being, or will be, provided on the shores of the reservoirs in order to facilitate public recreational use of the area. The company has already spent more than $7 million to provide facilities requested by the various fish agencies for the upstream and downstream migration of anadromous fish in the Snake River and is committed to substantial additional capital expenditures along with the annual cost of operating these facilities. In addition, these reservoirs are available for and will be utilized for the establishment of resident sports fishery. The company has entered into coordination agreements with members of the Northwest Power Pool whereby the substantial power generating capabilities of these projects and the release of stored water is available to firm up the supply of power and energy throughout the Pacific Northwest and to increase the generation of downstream powerplants.

As can be seen from the foregoing summary, the company throughout the years has utilized under State and Federal permits the water resources of the area in a manner that contributes to the economic well being of the territory served by the company. By virtue of the company's long experience in water development in this area, the company has the following suggestions to make as to the future development of the water resources.

(1) The basic objective in any water resource program in this area should be designed to obtain the maximum use of water for irrigation needs. The Snake River Valley is one of the few arid areas of the West blessed with the fortuitous combination of available land and adequate water supply. The Idaho State Department of Reclamation estimates that from 5 to 9 million acres of arid land in southern Idaho are topographically, climatically, and productively suited for future irrigation development. Due to physical, chemical, economic, and water conditions ultimate development of all of this land does not appear possible; however, at least 2 million acres of this land can be developed in the foreseeable future and the available water supply should be reserved for development of this land, as well as being utilized for supplemental water on those irrigated lands that do not now have a full or adequate water supply. In order to provide for additional irrigation development the most practical method would be the construction of storage reservoirs on the upper Snake River and

on those tributaries that do not now have adequate storage. The construction of these reservoirs along the headwaters of these various streams will not only prevent and forestall the runoff of water, vital for irrigation needs, but in addition will achieve multipurpose development by providing flood control, recreation and fish and wildlife benefits. An example of two watersheds in this area that could immediately benefit from such a program are the Weiser and the Malheur. Both of these rivers lack adequate storage facilities, have available land for irrigation adjacent thereto, and both have caused floods in recent years.

(2) Since the area's power needs are adequately provided for, these storage reservoirs should be constructed and designed primarily to fill the irrigation needs of the area and should not contain large, expensive, and needless power generating facilities as an adjunct thereto. Too often plans are formulated for development under the claim that they will aid reclamation, when in actuality upon close analysis the reclamation feature of such development has been subordinated to the power production features of such projects. Such projects are not only a waste of the taxpayer's money but as an ultimate result, since the funds available for any area are limited by the demands from other areas, such expenditures if allowed would materially reduce the amount of money available for true reclamation developments.

(3) Based upon existing studies the "Guffey" project located upon the Snake River would appear to be a feasible development and should be recommended for early construction. This project is designed to irrigate approximately 130,000 acres of fertile land and can be classified as a true reclamation development designed to increase the irrigable acreage of the area. The project lies adjacent to the heaviest populated area of the Snake River and appears to be economically feasible from a benefit-cost ratio.

(4) The company throughout the years has investigated various sites along the Snake River and its tributaries upstream from the Hells Canyon damsite and, based upon these studies and the estimated costs of such developments, the company does not believe that any site, other than Guffey would, at the present time, economically justify the construction of hydro powerplant. As we have met the electrical needs of the area at all times in the past, the company is prepared and ready to proceed with development of these additional sites as they are required in the future, supplementing these developments with necessary thermal or nuclear generation when available hydro possibilities are exhausted.

(5) After the Guffey project, the remaining land to be developed will cost considerably more per acre than present economic conditions warrant. However, the requirement for food some time after 1975 may require that serious consideration be given to devolopments which under today's conditions seem unreasonable as to costs. Present cost of water in Idaho now varies from an annual cost of $1 to $5 per acre-foot. Consequently, there is every reason to believe that 1 million acres of land below Milner Dam and above Weiser will be developed within the next 40 years, and additional irrigable land above Milner will also be developed during this period.

(6) Approximately 1 million kilowatts of potential power capacity are available for development on the Snake River above the mouth of the Salmon and below the company's Hells Canyon site. Operating utilities in the Northwest are ready and willing to develop this section of the river as soon as authority to do so is granted by the Federal Power Commission. The large power potential of the Salmon River, which traverses central Idaho, must apparently await solution of the migratory fish passage problem.

(7) The preceding comments refer principally to the Snake River Valley of southern and eastern Idaho, but there is evident need for the construction of multipurpose flood control and hydroelectric facilities on the Clearwater River in north Idaho, at Bruces Eddy, and other sites in order to afford proper flood control protection and assure full development of the water resources of that area.

Mr. ROACH. It may be news to the committee that our company is probably the largest private developer of water resources in the State of Idaho, devoting its attention entirely to the development of hydroelectric power for the benefit of the economy of the area. So far as I know, we are the only company in the United States today that is a simon-pure 100 percent hydroelectric system with 100 percent ownership of its own hydro resources.

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Over a period of almost 44 years as a regulated public utility we have had the privilege and responsibility of satisfying the needs of this particular area. As some of the previous witnesses have indicated, we have been fortunate in being able to stay ahead of the demand so that there never has been either a brownout or a shortage of any description in the power requirements of the State of Idaho and the Snake River Valley of eastern Oregon. As a utility company we have a very deep interest in the economy of the area. We recognize that the economy of the area as it exists today as its prosperity in the future gives promise is grounded in irrigated agriculture. Because of that fact we are deeply conscious of the importance of giving support to all sound irrigation and reclamation projects and to recognizing the priority of water for those needs, to the extent that in our recent Federal Power Commission licenses and in our recent State of Idaho permits there has been inserted at our request and with our encouragement the following stipulation:

> The rights herein granted for the use of waters, stream bed and other lands of the State of Idaho necessary for the construction and operation of the dam and reservoir are subject to the condition that the projects shall be operated in such manner as will not conflict wtih any future depletion in the flow of the waters of Snake River and its tributaries or prevent or interfere with future upstream diversion and use of such waters for the irrigation of lands and other beneficial consumptive uses in the Snake River watershed.

In keeping with that policy and philosophy since 1916 our company has cooperated closely with the U.S. Bureau of Reclamation in all of its activities and with the water users of the Snake River Valley. We have completely coordinated our hydro operations with those of the Bureau of Reclamation. We have made available to the Bureau our transmission facilities for the transmission of their power to the various points of use and as conditions changed from year to year, we have modified those agreements. We have just recently executed a new contract with the Bureau of Reclamation, the result of which has been to increase the firm power generating and supply capacity of the Bureau projects by almost 30 percent, without any capital expenditures whatever on the part of the Federal Government to achieve that.

We have been in the forefront in the promotion and encouragement of the utilization of underground waters by pumping for the irrigation of new lands, by supplying adequately low cost electric power for that purpose and installing these facilities ahead of the need.

It may be of interest to the committee to know that in a 10-year period our sales of power for irrigation pumping in our service area have increased 10 times.

In order to insure to the future a continuation of an adequate supply of electric power we are now in the midst of a very broad expansion program, the keys to which are these three new projects down in the lower Snake which recently were authorized by the Federal Power Commission.

We have a construction budget over a 10-year period of approximately $300 million to bring into being those new facilities and in doing that we have been extremely careful to be sure that every multipurpose benefits inherent in those projects are completely realized. Flood control, navigation, recreation, the protection of fish and wildlife and finally, the generation of power. We have endeavored to the best of our ability under the authority of the Federal licenses and

State permits to utilize the waters of the Snake and its tributaries in a manner that will best promote the economic well-being of the area.

So far as power supply in the future is concerned, we are bringing in over this 5-, or 6-, or 7-year period approximately $1,400,000 of new power supply. Immediately below us and above the mouth of the Salmon, there is sufficient head to produce another 1 million kilowatts of power and I know that the existing private utilities in the Pacific Northwest are ready to proceed with that development whenever the Federal Power Commission will approve an application to proceed.

So far as the Salmon River is concerned, it appears that its development for any power purpose must await the fish passage solution and in northern Idaho of course, as Senator Dworshak and Senator Church are so familiar with, there remains for final decision what is going to be done on the Clearwater River with Bruce's Eddy.

I very much appreciate the opportunity, Senators, of bringing to you a quick picture of the utilization of water for power here and I will inform you in the few minutes available to me what the program is as far as Idaho Power Co. is concerned.

Senator DWORSHAK. Could you take a minute or two and tell the committee about your commpany's activities and planning for fisheries in the Middle Snake area?

Mr. ROACH. In cooperation, Senator, with the Federal Fish and Wildlife Service and the various State agencies involved in the States of Idaho, Oregon, and Washington, we have proceeded to develop plans for passing the upstream migratory fish, past these obstacles in the river. With the installation of an original experiment above Brownlee we are making the first large attempt to pass fingerlings safely downstream, in the hope that that laboratory there will find an answer to the effective safe passage upstream and downstream of fish; because it is an original experiment never before tried, there naturally is much to be done in the way of research and study. It is a sort of trial and error procedure. Up to the present time our company has invested approximately $7½ million in facilities designed exclusively and especially for the upstream and downstream passage of fish. If we ultimately are called upon to satisfy what presently appeared to be the wishes and the desires and perhaps the requirements of the fish and wildlife agencies, we will have invested down there better than $14 million in facilities for fish alone and our estimate is that the annual operating cost, including fixed charges will be in the order of about $1,700,000 a year.

Senator CHURCH. Is that net holding up? I have heard reports you had difficulty with it, that holes develop.

Mr. ROACH. Senator, I think the net is holding up very well under the circumstances. It is a net that has been through a lot of difficulties because when you raise the reservoir initially you bring down all the trash that has accumulated in the river over the years. We have had that to contend with. It is a heavy steel matting that runs about 4,500 feet around the river and submerged to a depth of 120 feet. Over the surface of that net is draped a very fine nylon mesh, almost fine in texture as your wife's curtains in the living room and manifestly it is a piece of equipment that is subject to damage. So it re-

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quires constant maintenance and constant attention. But we have just completed, Senator, a foot by foot inspection and the surface of the net is almost between 6 and 8 acres, with the divers, and their report, which has been submitted to the fish and wildlife people indicates that the net is approximately 99.5 percent fish tight. Manifestly little holes are continuing to appear in the net and we have a continuous crew of divers on the job always working on it, inspecting, maintaining and repairing whatever damages that occur.

Senator CHURCH. Is this the first device of this kind that has been experimented with this size?

Mr. ROACH. So far as my knowledge goes, Senator Church, it is absolutely the first.

Senator CHURCH. On the basis of your accumulated experience you are going to be able to contribute a good deal to the progress of the investigation that now is taking place on the general problem of fish passage?

Mr. ROACH. We certainly hope that will be the end result, Senator, in cooperation with the various fish agencies.

Senator CHURCH. I want to say one other thing. I suppose it would be a masterpiece of understatement if I said we are not always in agreement on plans for development in Idaho.

I want to take this occasion to tell you that I think the contract that you entered into with the Bureau of Reclamation is of very much credit to both the Idaho Power Co. and the Bureau because it is based upon sound principles for comprehensive development. It coordinates the powerplants in such a way as to make the most efficient use of the river and therefore I think it is a very fine contract. It is going to solve very serious problems for the REA's and co-ops that are running short of power in central Idaho. I want to go on record here publicly and say I think this contract is much in the public interest. I followed it with great interest and I want to congratulate you on coming to terms with the Bureau of Reclamation.

Mr. ROACH. I appreciate your comments, Senator Church. I might say for the benefit of the committee on the matter of coordination, not only have we coordinated the facilities electrically and hydraulically with the Bureau of Reclamation but with every other operating utility in the Pacific Northwest power pool, whether it be Federal, private or municipal, so that in the development we become an integral part of the whole Northwest Power Pool and thereby achieve to the degree possible the maximum utilization in the interest of the area of those resources.

Senator YOUNG. May I ask a question at this point?

Do you furnish power to the REA co-ops?

Mr. ROACH. We don't furnish it directly, Senator, no. All of the REA co-ops, and we have only a very few of them in the State of Idaho, in our service area buy their power from the Bureau of Reclamation. And the reference of Senator Church was to the fact that our contract with the Bureau of Reclamation, where we increased their firm power generating capacity by 30,000 kilowatts meant that that 30,000 kilowatts was available for increasing their supply to these co-ops. In eastern Idaho, which is served by the Utah Power & Light Co., there are two or three co-ops there who by contract buy their power from Utah Power & Light. I believe in north Idaho, Wash-

ington Water Power sells to one or two co-ops at wholesale to supply their needs.

Senator YOUNG. What is the usual charge of wholesale power to REA co-ops?

Mr. ROACH. Senator, I don't know. Not doing business with any of them, I am talking from my memory and it may not be accurate. I hesitate to quote a figure for the record here but I believe the price runs probably somewhere in the neighborhood of 6 to 7 mills.

The CHAIRMAN. If subsequent inquiry on your part finds a different figure, would you supply it for the reporter?

Mr. ROACH. I can find the accurate figure, Senator, and another place you may find it is in the annual report of the Rural Electrification Administration which tabulates for each REA its purchases of power, the supplier and the average rate of pay.

Senator YOUNG. What do you charge consumers like in Boise?

Mr. ROACH. Our average residential revenue for killowatt-hour for domestic customers, Senator, is about 1.6 cents. We serve an area of better than 20,000 square miles, very sparsely settled, as you can imagine, because we have less than 600,000 people, or approximately 600,000 people in the State of Idaho. We have between 360,000 and 400,000 people in our service area. Our rates are uniform. We have a postage-stamp rate. Whether you are a citizen of Boise here living in the heart of Boise or a farmer 400 or 500 miles from Boise, you pay exactly the same rate as I do.

Our average revenue per farm customer is a shade under the 1.6 figure I mentioned with respect to the domestic consumer in town. We sell industrial power as low as 3.6 mills and that includes an increment of taxes that represent in our case 30 cents out of every dollar we collect, or about 30 percent.

Senator YOUNG. 3.6 mills?

Mr. ROACH. Yes, sir; a low rate of 3.6. Westvaco Chemical down here, our largest industrial consumer at Kotello Pass, has an overall average of slightly over 4 mills.

Senator YOUNG. Thank you.

(The following statement was asked to be put in the record at this point:)

STATEMENT OF THE WASHINGTON WATER POWER CO.

This statement is presented on behalf of the Washington Water Power Co., which serves electricity to 38,743 customers in the State of Idaho and 109,422 customers in Washington. Its electric-energy resources are 100 percent hydro, amounting at the present time to 611,000 kilowatts from its own generating system. Upon completion of its 400,000-kilowatt Noxon project on the Clark Fork River in the spring of 1960, it will be self-sufficient as to power supply, and no longer dependent, as it has been to a certain extent in the past, on the Federal Government for portions of needed power.

It is and will continue to be the policy of the Washington Water Power Co. to construct electric-generating capacity as its loads grow to maintain this independent position. Because the effect of preference laws giving priority on Federal power to public agencies, the company does not feel that it can safely discharge its utility responsibility by depending on Federal power sources.

While the primary interest of the Washington Water Power Co. in the region's river resources is hydroelectric generation, as a citizen of the Northwest, it is also vitally interested in knowing that the area's future consumptive water needs for irrigation, domestic and industrial purposes will be assured. The company also considers of prime importance the use of our rivers for fish and game propagation and recreational purposes.

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The best multipurpose development of a river basin will give weight to each of those uses and, along with providing adequate flood control, achieve the greatest benefit for the area as a whole. Maximum hydro development, for example, might not constitute best comprehensive development if it were built without regard for those other uses of a river.

The Board of Engineers for Rivers and Harbors, U.S. Army Corps of Engineers, has prepared, and the Chief of Engineers will submit to Congress, a "Major Water Plan" for the Columbia River system which, in our opinion, answers most of the questions asked by your committee. This report is the direct result of a study lasting several years and costing over $2 million. The Corps of Engineers has a background of many years of responsibility for river development, and in preparing that report applied the best known criteria for comprehensive development.

A prompt decision must be made by Congress on the "Major Water Plan" so that needed development of our Northwest rivers can go forward. We must ignore those who, because controversy serves their end, would force upon us further dispute and delay. The State of Idaho and the Pacific Northwest cannot tolerate delay in the development of its rivers.

The development of the required hydro power resources alone for the Pacific Northwest is such a tremendous undertaking that the combined capital resources of Federal, non-Federal, and private agencies will be needed.

In the past 10 years $2,156 million was expended on hydro projects in the Pacific Northwest. Of this amount, expenditures by the Federal Government amounted to $1,618 million or an average of $162 million per year.

In order to meet projected power requirements for the next 10 years, over $3¼ billion, or $328 million per year, will be required. Non-Federal and private agencies are already committed to supply $769 million of this amount, or an average of $77 million per year. Federal expenditures for the next 10 years on Pacific Northwest hydro projects now under construction will amount to an average of $78 million per year.

If Congress would authorize Federal expenditures for this region for the next 10 years that would be equivalent to the average of the past 10 years ($162 million per year), there would still be an average of $89 million per year that must be financed by non-Federal expenditures. This is a big job for everybody, and wherever possible, water development should be made with non-Federal expenditures.

It is our belief that the Federal Government through its presently constituted agencies should continue to use all practical means to guide, as the bill states, the "conservation, development and utilization of the natural resources of the Nation to meet human, economic, and national defense requirements * * *"

We have no question that the Federal Government should assist and cooperate with industry, agriculture, labor, conservationists, State and local governments and private property owners. But it should never usurp the responsibilities of carrying out such a vital program.

Senator DWORSHAK. Our next witness is Ray W. Kueneman, representing the Idaho State Chamber of Commerce, to discuss tourism and industrial uses of Idaho's water resources.

STATEMENT OF RAY W. KUENEMAN, IDAHO STATE CHAMBER OF COMMERCE, BOISE, IDAHO

Mr. KUENEMAN. Mr. Chairman, my name is Ray W. Kueneman. I am a director of research of the food processing division, J. R. Simplot Co., and I have been actively engaged in this field for the past 20 years, including 14 years in Idaho.

I am appearing today in behalf of the Idaho State Chamber of Commerce, a statewide, nonprofit organization whose members include a majority of Idaho's larger industrial water users.

The Idaho State chamber believes it can best serve the committee, Mr. Chairman, by submitting for the record a detailed report of the Idaho Water Resources Conference sponsored by the chamber in April

of 1958. Although the material contained in the report was presented more than 1 year ago, the information, in my considered opinion, remains timely and falls within the scope of this hearing.

Four topics were discussed during the conference; namely, "Existing Water Resources of Idaho," "Legal Safeguards for Conservation and Utilization," "History and Function of Interstate Compacts," and "Needs and Responsibilities of Industry as a Water User."

With the committee's permission, I wish to give a brief summary of these presentations.

It is important, also, to mention the action taken following the conference. Those in attendance approved the following resolution:

Be it resolved, That it is the sense of this meeting that the chairman be authorized to appoint a committee of seven members, chosen with consideration being given to geographical distribution and representation of the major water users groups, to serve as a liaison body among the water users of the State, to the end that opportunity may thus be given for thorough discussion of proposed legislation, both State and Federal, by all interested parties to assist in determining policies that are truly representative of Idaho's interests.

Such a committee has been organized, to function as the occasion demands.

The late Mark R. Kulp, then Idaho State reclamation engineer, presented the report on existing water resources of Idaho. He reported that the State has virtually unlimited water resources, but he emphasized that consideration must be given to seasonal and geographical distribution.

He said geographical distribution can be corrected by transbasin diversions and pumping and seasonal distribution by adequate storage.

According to Mr. Kulp's estimates, about 70 million acre-feet of water pass downstream annually, about half of this originating in Idaho. His list of underground water reserves included 50 million acre-feet in the Snake River Plain, at least 1,740,000 acre-feet in the Boise Valley, and approximately 604 million acre-feet in permanent storage in the Rathdrum Prairie area of northern Idaho.

Mr. Kulp estimated that the irrigated area in Idaho totals about 2,750,000 acres, making irrigation the largest consumptive use of water, and he added that the irrigated acreage of the State has been increasing at an average rate of 39,000 acres each year during the past 10 years.

Attorney William Holden, a recognized authority on Idaho water law, discussed legal safeguards for conservation and utilization. I wish to direct the committee's attention to the following excerpts from Mr. Holden's discourse.

The members of the Idaho Constitutional Convention knew the important part water would play in the future growth and development of our State and they laid the foundation for a sound but flexible State water policy in the constitution itself.

Our State water policy, which is deep rooted in our State constitution, has been expanded and developed through the years by acts of our legislature and decisions of our supreme court. This policy provides for the conserving of our water resources and the protecting of rights to the use of water founded on State law.

To further quote Mr. Holden:

* * * Let me say that on the whole Idaho has adequate legal safeguards to protect an established right to the use of water and adequate laws to guard against waste. These laws, however, are flexible and must be interpreted in their application to a particular set of facts.

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H. Calvert Anderson, then secretary of the Columbia Interstate Compact Commission, addressed the conference on the subject of the history and function of interstate compacts.

Mr. Anderson said that the commission's member States of Idaho, Montana, Oregon, Washington, Wyoming, Utah, and Nevada have these objectives: Establishment of priorities of water use and allowable depletion for various uses; control of pollution; provision for regional planning; coordination of water operations; protection and enhancement of fish, wildlife, and recreational values; development of hydroelectric power; control of out-of-basin diversion; promotion of solutions to international problems; and the establishment of a permanent, functioning interstate commission.

Mr. Anderson stated at the time—and his statement still holds true— that the commission faces the challenge of—

making clearly understood the conviction that, in the ultimate, what is best for the entire Columbia River Basin is best for all parts of the basin.

It was my privilege during the conference to discuss the needs and responsibilities of Idaho industry as a water user and I would like to expand somewhat on the presentation I made at that time.

Reliable statistics show that industry in our Nation will require an estimated 115 billion gallons of water each day by the year 1975, almost double the amount that was required in 1955, and I might say that these figures are on the low side.

Statisticians also tell us that industry and population are shifting to the Western United States. As this shift develops, industry will continue to expand in Idaho, industry that utilizes our State's abundant natural resources.

As we increase the utilization of our timber we can expect to see more pulp and paper manufacturing. Availability of natural gas, combined with our vast reserves of phosphate and the eventual use of noncoking coal present in the region, will lead to the growth of chemical processing industries in southeastern Idaho.

One of our fastest growing industry groups is that of food processing, particularly in the Lewiston area in northern Idaho and throughout the Snake River Plain. I might say in this respect, Idaho has a rather unique position in that they have increased the overall shipment of fresh potatoes in contradiction to any of the other potato-producing States and that they show a decided increase in processing, some 40 to 50 percent of the State's crop this year will be processed in various forms.

Water is vital to food processing in two ways. It produces the raw crops that go into the final product and the millions of gallons of water used in the processing plants themselves.

As I stated at the time of the water resources conference, nothing is more important than water to modern industry. Waters of varying qualities and quantities are essential to our every phase of life, from the production of the basic materials to the finished products.

We in industry in Idaho are satisfied that we have ample water now and a more than adequate potential for future development. Our industrial water users will continue to expand their industries as markets increase and as we provide the logical, orderly development and distribution of our water resources according to priorities estab-

lished by our sound and workable State laws, implemented by equitable compacts among, and by, our neighboring States, where a need for such compacts is determined to exist.

Thank you.

(The report referred to by Mr. Kueneman above follows:)

IDAHO WATER RESOURCES CONFERENCE, BOISE, APRIL 25, 1958

[From the Idaho Daily Statesman, Apr. 26, 1958]

WATER RESOURCES GROUP URGES USERS COOPERATION

Increased cooperation among water users was the goal of a resolution approved Friday at the water resources conference of the Idaho State Chamber of Commerce.

The group authorized the conference chairman, I. H. Harris of Burley, to appoint a seven-member group. It would be chosen on a geographical basis and also in a way to give representation to the State's major water user groups.

Harris said the committee would be intended to serve as a liaison group between the water users of the State in the hope that proposed legislation would be given thorough discussion and a unified stand on it reached.

APPOINTMENT AUTHORIZED

Appointment of the committee was authorized at the conclusion of a day-long conference at which Idaho's water resources were reviewed.

"The Idaho Supreme Court has declared that it is the policy of the laws of Idaho to require the highest and greatest possible duty from the waters of the State in the interest of agriculture and other useful and beneficial purposes," said William N. Holden, Idaho Falls attorney, one of four speakers.

"It is clear," he said, "that the title to the public waters is vested in the State for the purpose and benefit of all citizens under such rules and regulations as may be prescribed from time to time by the legislature and the courts.

PROVISIONS ADEQUATE

"There appear to be adequate provisions to provide against waste of our water resources. * * * No water user is permitted to take more of the water to which he is entitled than is necessary for beneficial use."

Mark R. Kulp, State reclamation engineer, noted that irrigated acreage of the State has been expanding at the rate of 39,000 acres annually for the past decade. New lands include those supplied by water from pumping, using both ground water and stream water.

"We have about 8 million acre-feet of storage in the Snake River Basin," he said. "There is an evaporative loss from the storage but although this evaporation is from water stored in constructed reservoirs, the net storage retained is water that formerly ran down the Snake and Columbia."

UTILIZATION ESTIMATED

He pointed to utilization of underground water—which he estimated at 50 million acre-feet in the Snake River plain of southern Idaho—as holding great potential.

Ray W. Kueneman, director of research for J. R. Simplot Co. food processing division in Caldwell, said water is vitally important to industry. He said the processing of Idaho's corn crop alone takes 80 million gallons of water each year.

"All industries have disposal problems in using water," he said. "So does agriculture, with waste water problems, rising water tables and possible contamination by misuse of fertilizers and insecticides."

Efforts to draft a Columbia River compact were reviewed by H. Calvert Anderson, Spokane, executive secretary of the Columbia Interstate Compact Commission.

"What is needed now," he said, "is more men with a deep conviction that what is best for the entire basin is in the ultimate best for all parts of the basin and with the foresight and courage to stand by that principle regardless of local pressures and self-centered interests."

IDAHO WATER RESOURCES CONFERENCE, BOISE, APRIL 25, 1958

REGISTRATION

Conference chairman

I. H. Harris, Burley, first vice president, Idaho State Chamber of Commerce.

Speakers

Mark R. Kulp, Idaho State reclamation engineer, Boise.
Wm. N. Holden, attorney at law, Idaho Falls.
Ray W. Kueneman, J. R. Simplot Co., Caldwell.
H. Calvert Anderson, executive secretary, Columbia Interstate Compact Commission, Spokane.

Participants

Mrs. Homer Garton, League of Women Voters, Boise.
Mrs. W. L. Venning, League of Women Voters, Boise.
Mrs. Gene Curtis, League of Women Voters, Boise.
Mrs. William C. Walton, League of Women Voters, Boise.
Mrs. George Wells Smith, League of Women Voters.
Jack Clifford, North Idaho Chamber of Commerce.
Jay W. Thaanum, Soil Conservation Service, Boise.
Armand L. Bird, Idaho State Medical Association, Boise.
Meader H. Wilkins, Soil Conservation Service, Boise.
R. N. Irving, Soil Conservation Service, Boise.
Edward W. Smith, State Forestry Department, Boise.
Art Roberts, Idaho Municipal League.
Oscar P. Newman, Boise Water Corp.
Evan M. Kackley, Boise.
Oscar W. Worthwine, Mining, Boise.
Verl J. Andrew, Idaho Drillers Association.
Claude H. Pair, Agricultural Research Service, Boise.
H. C. Fletcher, Agricultural Research Service, Boise.
Lowell C. Moore, president, Idaho Association of Soil Conservation Districts.
Bruce Bowler, Idaho Drillers Association, Idaho Wildlife Federation, Boise.
A. N. Vendell, Utah Power & Light Co., Preston.
W. P. Dunlap, Monsanto Chemical Co., Soda Springs.
Dorrell C. Larsen, University of Idaho Extension Service, Boise.
Vaughn Anderson, State Department of Health and Idaho Society of Professional Engineers, Bosie.
W. J. O'Bryant, Utah-Idaho Sugar Co., Idaho Falls.
Harry W. Marsh, Idaho Mining Association, Boise.
G. L. Crookham, Jr., Chairman, House Irrigation and Reclamation Committee, 34th session, Idaho Legislature, Caldwell.
C. J. Hopkins, North Idaho Forestry Association, Lewiston.
E. V. Lorenz, Lewiston Chamber of Commerce, Lewiston.
T. E. Roach, Idaho Power Co., Boise.
A. C. Inman, Idaho Power Co., Boise.
Forrest Sower, vice president, Idaho State Reclamation Association, Boise.
F. W. Castello, executive secretary, Idaho Farm Bureau Federation, Pocatello.
William M. Carson, director, Idaho Farm Bureau Federation, Weiser.
W. E. Adams, master, Idaho State Grange, Eagle.
Howard E. Ahlskog, supervisor, Boise National Forest, Boise.
David Little, Idaho Wool Growers Association, Emmett.
A. B. Wheeler, Bank of Idaho, Boise.
A. B. Martin, Washington Water Power Co., Spokane.
Carey H. Nixon, Washington Water Power Co., Boise.
Robert M. Henderlider, Idaho Cattlemen's Association, Boise.
George V. Hjort, Southern Idaho Forestry Association, Boise.
R. F. Ball, Idaho Power Co., Boise.
Robert A. Hogg, Idaho Power Co., Boise.
Harry R. Stivers, Bureau of Reclamation, Boise.
Harold T. Nelson, Bureau of Reclamation, Boise.
J. R. Penny, State Supervisor, Bureau of Land Management.
Earl W. Murphy, secretary, Idaho State Chamber of Commerce, Boise.
Hugh A. Wilson, assistant secretary, Idaho State Chamber of Commerce, Boise.

PREFACE

Idaho is blessed with an abundance of water. But this treasure often is a blessing we fail to count. We must make wise use of this unsurpassed natural resource if we are to meet the future needs of our expanding population, more and more industry and thousands of new acres of productive land.

Recognizing the need to focus attention on the growing importance of water as a valuable Idaho resource, the Idaho State Chamber of Commerce sponsored the Idaho Water Resources Conference, to which were invited representatives of every statewide organization with an interest in the subject.

The objective of the conference was to initiate a program of water conservation and utilization that would have widespread support.

Participants in the meeting authorized the conference chairman to appoint a committee of seven members, representing major water user groups throughout Idaho, to serve as a liaison body among the water users of the state and to assist in determining policies truly representative of Idaho's interests.

Existing Water Resources of Idaho

By Mark R. Kulp, Idaho State Reclamation Engineer

The water resources of Idaho are large and important and except for the distribution seasonally and geographically, are adequate. The seasonal distribution can be corrected by adequate storage and the geographical distribution by transbasin diversions and pumping.

Some 70 million acre-feet of water pass downstream annually across the State's borders. About half of this originates in Idaho.

In addition to the surface supply, there are vast reserves of underground water. Under the approximately 10 million acres of the Snake River Plain, assuming that the tverage thickness of the saturated material is 500 feet and the porosity from which water can be recovered is 1 percent, the reserve would be 50 million acre-feet. This figure is conservative and could possibly be only one-third or one-fourth of the actual. The Boise Valley would have a reserve of at least 1.75 million acre-feet, or about equal to 1 year's runoff of the Boise River. The Rathdrum Prairie in North Idaho has been estimated to have 604 million acre-feet in permanent storage.

The underground storage reserve can be likened to natural lakes with streams running in and a stream or streams running out, except that in a lake there is no waste space. Underground storage reserve is money in the bank.

Surface and ground water follow the same laws of physics. Under the influence of gravity and available channels, the water, which is all derived from precipitation, may change from surface to subterranean and back again to surface water. Subterranean and surface flows join, intermingle, and separate, but irrigation has changed the natural exchange between surface and subterranean flows.

Irrigation is the greatest consumptive use of water and each acre of irrigated crop returns about 1.8 acre-foot of water to the atmosphere in the form of vapor, in addition to that returned by rainfall

The irrigated area of Idaho is about 2.75 million acres, although the census figures give considerable less. The census figures are of acres of irrigated land from which crops were harvested in the census year. They do not give the acreage on which there was a consumptive use of water, such as parks, golf courses, cemeteries, small suburban acreage not large enough to call farms, and wet land and swamps which deplete the water supply but are not surface irrigated.

The average diversion in Idaho is about 6 acre-feet per acre, of which 1.8 acre-feet are used consumptively by evaporation and plant transpiration. The remaining 4 acre-feet plus is returned to the stream and part of it returns soon enough to be rediverted. Some has gone into permanent ground-water storage reserve and is money in the bank for use when we need it and can afford to recover it.

The Snake River between Milner and King Hill picks up about 4.5 million acre-feet of water from Thousand Springs and irrigation losses. The water from Thousand Springs probably originates from river losses above Milner, the so-called lost rivers, i.e., Big Lost, Little Lost, Birch Creek, Medicine Lodge, and Camas and from deep percolation from irrigation on Snake River and tributaries above King Hill.

The average flow past Weiser amounts to 13.5 million acre-feet, a part of which originates in Nevada and Oregon.

The Thousand Springs discharge has increased with the increase in irrigation and is more uniform throughout the year and from year to year. Irrigation, with its storage and return flow, has stabilized the Snake River flow at Weiser so that the flood peaks are lower and the low season flows are greater.

Future irrigation development will further stabilize the flow, although the consumptive use will increase. The irrigated acreage in Idaho can be more than doubled to a total of about 6 million acres when population pressure demands and economic factors permit.

The irrigated acreage of the State has been increasing at an average rate of 39,000 acres per year over the past 10 years. This includes land irrigated by pumping from ground water and some pumping from streams. Examples are north side Minidoka, Michaud Flats, Fort Hall Indian Reservation development, desert entries, by pumping and several thousand acres by the Magic Water Co. in Twin Falls County.

The Crystal Springs Irrigation Co. proposes to irrigate 66,000 acres west of Hagerman by pumping from the Snake River with power to be supplied from a hydroplant in the Snake River.

We have about [illegible] million acre-feet of storage in the Snake River Basin. There is an evaporative loss from the storage but although this evaporation is from water stored in constructed reservoirs, the net storage retained is water that formerly ran down the Snake and Columbia.

Experiments are being carried on with the object of eliminating or at least reducing evaporation from free water surfaces.

North Idaho has a large runoff, but it is several hundred miles away and from 2,000 to 3,000 feet lower in elevation than the bulk of the available irrigable land in the Snake River Plains. Some of the Salmon River can be stored and diverted through tunnels to flow by gravity to lands in the Snake River Plain.

There are several hundred thousand acres in the Kootenai Valley and in Bonner and Kootenai Counties that can be irrigated by the north Idaho rivers that are used principally for power production. Industrial use will increase in the north, especially if objectionable odors and pollution can be controlled.

There are some irrigable lands near Lewiston that can be reached by high pumping lifts; long costly diversions or high lifts will make land in Salmon River drainage irrigable. Storage in the Bear River drainage can increase the irrigable land there, but the bulk of the newly irrigated land will be in the Snake River Plain in south Idaho.

Storage, reduction of evaporation, pumping, ground water recharge, and exchange of water will be necessary for the optimum utilization of our water resources. As an example of possible exchange, the north side Twin Falls project diverts 6 acre-feet per acre for 175,000 acres about 1 million acre-feet per year. Some 350,000 acre-feet net per year could be supplied from ground water, if it could be made financially attractive to the north side. Then the million acre-feet could be diverted to the south side of the river where land is plentiful and water is scarce. There would have to be many difficult adjustments and suitable guarantees as well as financial incentive, but physically it is possible.

Hydroelectric generation, flood control, and irrigation can be coordinated. A good example is the Payette River. Storage at Cascade can be run through powerplants at Scriber Creek and recaptured in a Garden Valley Reservoir and again run through a powerplant when released for irrigation. Storage in the Payette Lakes, Cascade, Deadwood, and Garden Valley storage is enough to control floods without detriment to power and irrigation use.

Upstream storage, while costly and subject to uncertainties in filling, can be used over and over again on its way to the irrigated lands.

The Clearwater River, which is the flood-producing tributary of the Snake and also of the Columbia, can be regulated by storage and give flood control protection to Lewiston and at the same time make the navigation and power developments on the lower Snake more attractive and thus promote slack water navigation to Idaho's only sea port at Lewiston.

Use of the Clearwater will not interfere with any of Idaho's irrigation rights or use any water likely to be needed for future irrigation development. The water resource includes hot springs, mineral springs and fishing.

Irrigation reservoirs provide fishing and boating opportunities equal to or greater than would exist without irrigation. The pattern has changed but the recreational resource has increased along with the fishing pressure that follows increases in population.

Quality of water is important. Municipalities are building sewage-treatment plants to reduce pollution. The mining industry has cooperated in reducing pollution from mill tailings and dredge pond waste.

There are no very serious contamination problems, except in a few instances, but progress in correcting the problems is satisfactory.

The Salmon River, Bear River, and the Snake River and its tributaries above Weiser should be dedicated to irrigation and other consumptive uses and the surplus used for power and navigation when the anadromous-fish problem is solved. The other streams can provide for irrigation needs without interfering with their industrial and power use.

The water laws of Idaho are well developed, except that the ground-water laws have not been through the courts yet and we have no statute fixing authority and responsibility for stream channels. We have been modifying stream channels for the purpose of making diversion for nearly 100 years without statutes. The upper Snake interstate waters are covered by the Snake River compact between Idaho and Wyoming. The Bear River Commission, which is newly formed, will administer the Bear River compact among the States of Idaho, Utah, and Wyoming. Salmon Falls Creek is the subject of interstate agreement between the water users of Idaho and Nevada. Goose Creek waters in Nevada, Utah, and Idaho were adjudicated by an Idaho district court.

The Columbia Interstate Compact Commission has been the subject of negotiation among the seven Columbia Basin States since 1950. The 1955 draft, which the Idaho commissioners signed and which was ratified by the Idaho State Legislature, provides for future irrigation development without interference by power and navigation demands to a satisfactory amount of irrigation depletion to the year 2010. The Libby Dam on the Kootenai, when international agreement is reached, will provide needed flood control for the Kootenai Valley.

Legal Safeguards for Conservation and Utilization

(By William S. Holden, Idaho Falls)

The members of the Idaho Constitutional Convention knew the important part water would play in the future growth and development of our State and they laid the foundation for a sound but flexible State water policy in the constitution itself. Our State water policy, which is deep rooted in our State constitution, has been expanded and developed through the years by acts of our legislature and decisions of our supreme court. This policy provides for the conserving of our water resources and the protecting of rights to the use of water founded on State law.

I want at the outset to briefly outline our "State water policy."

Section 3 of article 15 of the Idaho constitution, dealing with the question of water of natural streams—right to appropriate, State's regulatory power—and priorities is the basis of our State water policy. That article is as follows:

Article 15, section 3. "The right to divert and appropriate the unappropriated waters of any natural stream to beneficial uses, shall never be denied, except that the State may regulate and limit the use thereof for power purposes. Priority of appropriation shall give the better right as between those using the water; but when the waters of any natural stream are not sufficient for the service of all those desiring the use of the same, those using the water for domestic purposes shall (subject to such limitations as may be prescribed by law) have the preference over those claiming for any other purpose; and those using the water for agricultural purposes shall have preference over those using the same for manufacturing purposes. And in any organized mining district those using the water for mining purposes or milling purposes connected with mining, shall have preference over those using the same for manufacturing or agricultural purposes. But the usage by such subsequent appropriators shall be subject to such provisions of law regulating the taking of private property for public and private use, as referred to in section 14 of article 1 of this constitution."

Thus, it is seen from this article that the basic principles of our State water policy are as follows: (1) Priority of appropriation shall give the better right (2) when the waters of a natural stream are not sufficient for the service of all those desiring the use of the same, preference in the use are in the following

order: (*a*) domestic purpose first, (*b*) in any organized mining district those using the water for mining purposes or milling purposes connected with mining, shall have preference over those using the same for manufacturing or agricultural purposes, (*c*) water for agricultural purposes is third, (*d*) those using the water for manufacturing purposes is fourth.

Other sections of the Idaho constitution relating to use and regulation of waters appropriated for sale, rental, or distribution are set forth in sections 1, 4, and 5 of article 15.

The Idaho Supreme Court has declared that it is the policy of the laws of Idaho to require the highest and greatest possible duty from the waters of the State in the interest of agriculture and other useful and beneficial purposes.

The Supreme Court of Idaho stated: "It is the policy of the law to prevent the wasting of water" (*Stickney* v. *Hanrahan*, 7 Idaho 422). Our supreme court has stated in the case of *Coulson* v. *Aberdeen-Springfield Canal Company*, 39 Idaho 320 and *Glavin* v. *Salmon River Canal Company*, 44 Idaho 583, that the waters of the State are held to belong to the State, and the right to the beneficial use thereof is all that can be acquired; and it is against public policy for a water user to take from an irrigation canal more water, out of that to which he is entitled than is necessary for the irrigation of his land or for other lawful purposes." Our court has further stated in the cases of *Reynolds Irrigation District* v. *Sproat*, 69 Idaho 315 in re *Simonson* v. *Moore*, 72 Idaho 39, that "It is the policy of the law to encourage the most efficient, and least wasteful, use of the waters of the State."

Section 42–101 of the Idaho Code, the section dealing with water appropriation, declares: "Water being essential to the industrial prosperity of the State, and all agricultural development throughout the greater portion of the State, depending upon its just apportionment to, and economical use by, those making a beneficial application of the same, its control shall be in the State, which, in providing for its use shall equally guard all the various interests involved. * * *"

It is clear, according to the decisions of the Idaho Supreme Court, that the title to the public waters of the State is vested in the State for the purpose and benefit of all citizens under such rules and regulations as may be prescribed from time to time by the legislature, and the court, speaking in the case of *Walbridge* v. *Robinson*, 22 Idaho 236, states: "That this is not an interest of title in a proprietary sense, but rather in a sovereign capacity, as representative of all the people for the purpose of guaranteeing that the common right of all shall be protected."

CONSERVATION

Now, to get down to the specific question of conservation.

There appear to be adequate provisions in our Idaho law to provide against waste of our water resources. In addition to the safeguards set forth above, our law provides, in connection with the needs of an appropriator, that the intending appropriator may acquire the right to the use of as much water as necessary to satisfy his lawful requirements; but no water user is permitted to take more of the water to which he is entitled under his appropriation than is necessary at the time for the beneficial use for which he has appropriated it.

Furthermore, said the Supreme Court in the case of *Coulson* v. *Aberdeen-Springfield Canal Company*, 39 Idaho 320, "* * * it is against the public policy of the State, as well as against express enactments, for a water user to take from an irrigation canal more water, of that to which he is entitled, than is necessary for the irrigation of his land and for domestic purposes.* * * It follows, therefore, that no legal duty devolves upon any water user to divert any more of the water to which he is entitled than he can put to a beneficial use.* * *"

The courts have also held that "No appropriator is entitled to make a wasteful use of water."

"*Entire flow of stream.*—One may lawfully divert the entire flow of a stream as against junior claimants if the quantity of such flow is within the limits of his appropriative right and is necessary for the purposes for which the right was acquired.

"*Beneficial use.*—It is provided by statute, section 42–220 Idaho Code, that no licensee nor any claimant of a decreed water right 'shall at any time be entitled to the use of more water than can be beneficially applied on the lands for the benefit of which such right may have been confirmed.' The supreme court also has held that the appropriator is held to the quantity of water he is able to

divert and apply to a beneficial use at a particular time, within the limit of his appropriation (*Lee* v. *Hanford*, 21 Idaho 327).

"*Economical and reasonable use.*—In addition to beneficial use, the factors of economy and reasonableness of use of water have been imposed upon the appropriator; but in some of the decisions the courts have been careful not to push their interpretation of reasonableness to the point of imposing unreasonableness upon the appropriator. In one decision, *Washington State Sugar Company* v. *Goodrich*, 27 Idaho 26, Idaho Supreme Court said: 'It is the settled law of this State that no person can, by virtue of prior appropriation, claim or hold more water than is necessary for the use of the appropriation, and the amount of water necessary for the purpose of irrigation of the lands in question and the condition of the land to be irrigated should be taken into consideration. * * * A prior appropriator is only entitled to the water to the extent that he has use for it when economically and reasonably used. It is the policy of the law of this State to require the highest and greatest possible duty from the waters of the State in the interest of agriculture and for useful and beneficial purposes.'

"A Federal court agreed, in the same year, *Caldwell* v. *Twin Falls Salmon River Land and Water Company*, 225 Idaho 584, that conservation of water is a wise public policy, but added that so also is the conservation of the energy and well-being of the water user and that economy of use is not synonymous with minimum use.

"*Conveyance losses.*—In determining the quantity of water which an appropriator is entitled to divert from a stream, the question of the reasonableness or unreasonableness of the loss of water from the ditch through seepage and evaporation is a proper subject for inquiry.

"An appropriator is required so to construct his ditch that there will be the least possible waste of water; and a water user is entitled to allowance for only a reasonable loss in conducting his water from the point of diversion to the place of use." *Basinger* v. *Taylor*, 36 Idaho 591.

"*Statutory duty of water.*—The statute governing the appropriation of water, 42–202 Idaho Code, provides that no one shall be authorized to divert for irrigation purposes more water than 1 cubic foot per second of the normal flow for each 50 acres of land to be irrigated, or more than 5 acre-feet of stored water per annum for each acre to be irrigated, unless it can be shown to the satisfaction of the department of reclamation that a greater quantity is necessary. Another section, 42–220 Idaho Code, provides that no license or court decree shall confirm the right to use more water for irrigation purposes than 1 second-foot for each 50 acres unless the department or the court, respectively, is satisfied that more is necessary.

"*Determination of duty of water.*—In the case of irrigation water rights, our court has held that the requirements of the land are taken into consideration in determinating the quantity of water to which the appropriator should be entitled and likewise the rule as to practical requirements applies to the quantity of water required to operate a mill under an appropriation of water for that purpose. The Supreme Court stated in 1952 in the case of *Uhrig* v. *Coffin*, 72 Idaho 271, that 'Many factors enter into a determination of the duty of water, which is based upon two primary considerations; beneficial and economical use. The determination of this question is a determination of a fact. * * *'

"The court held that the viewing and inspection of the premises by the trial judge, while not a substitute for evidence nor to be considered as evidence, nevertheless are to be considered in determining the weight and applicability of the evidence with respect to the duty of water.

"*Points of measurement of water.*—The Idaho water rights statute provides that the holders of decreed rights are entitled to have their water measured at the point of diversion, section 42–110 Idaho Code; and the supreme court likewise has so held, 30 Idaho 389. As noted above, the appropriator is entitled to a reasonable allowance for loss of water in transit between the point of diversion and the place of use."

The Idaho Code also provides that artesian wells are to be capped when the water is not being used in order to prevent waste.

USE—UTILIZATION OF WATER

Now let us consider briefly the Idaho law which protects one's right to the use of water. In this connection, it is important to know who, under the laws of the State of Idaho, may appropriate water.

The statute 42–202, Idaho Code, provides that "any person, association, or corporation hereafter intending to acquire the right to the beneficial use of the waters of any natural streams, springs, or seepage waters or lakes, or other public waters in the State of Idaho," shall, before doing any work in connection with the proposed appropriation, make application to the State for a permit therefor."

The decisions of the Idaho Supreme Court, so far as has been ascertained, have not placed any limitations upon the personal characteristics or qualifications of appropriators under either the statutory or the so-called constitutional method.

With reference to the utilization of waters, our statute provides two methods by which waters can be appropriated for a benefical use, and both methods are of equal validity. They are (1) the so-called constitutional method and (2) the statutory method, either of which may be followed by an appropriator at his option. The constitutional declaration of the right to appropriate water has been construed as authorizing a person to appropriate the waters of a stream simply by "actually diverting the waters and applying it to a beneficial use." It must be borne in mind that in order to acquire a property right in the use of water, it must be appropriated for and put to a beneficial use. In view of the above declaration in the constitution, legislation providing for a specific method of appropriating water does not thereby set up an exclusive method, a right may still be acquired by diversion and use of the waters without conforming to statutory requirements, but if this latter method is pursued it is best to have the date of priority established by judicial decree.

The statute now in effect provides that one intending to acquire the right to the beneficial use of the waters of natural streams and other named sources shall, before commencing work on the physical system, make an application to the department of reclamation for a permit to make the appropriation. Upon making proof of completion of works, the holder of the permit receives from the department a certificate. Upon making a proof of application of the water to beneficial use, he receives a license which is prima facie evidence as to the right of the licensee to use the quanity of water indicated therein. This license or permit, however, is not an appropriation of water and is not real property under the statute, it is merely a consent given by the State for making the appropriation of the waters to a beneficial use. The applicant must comply substantially with every provision of the statute affecting the issuance of the permit and fulfill all the conditions and limitations therein.

There is no superiority in the right obtained under either method of appropriating water over that obtained under the other method, other than with respect to the date of priority of the right. The right to use of waters has been held by our courts to be a property right and the same can be sold and conveyed. Our court has said in the case of *In Re Robinson*, 61 Idaho 462, that a water right is real property and may be transferred and sold separate and apart from the land on which it is used, and may be made appurtenant to other lands so long as such transfer does not injure other appropriators. This rule has been consistantly adhered to. Of course, the statute provides the procedure to follow in transferring water from one parcel of land to another.

The water rights statute, section 42–104, Idaho Code, provides that the appropriation must be for some useful or beneficial purpose, without placing any limitation upon purposes that would be considered useful or beneficial; and the so-called constitutional or nonstatutory appropriations likewise may be made, apparently, for any useful or beneficial purpose.

Use of water for irrigation of agricultural lands has been involved in the greatest number of decisions that have reached the Idaho Supreme Court, but various other purposes likewise have been in litigation in some of the cases. Multiple uses were included in one appropriation, namely, drinking, cooking, domestic purposes, watering stock, and irrigating truck gardens (29 Idaho 761).

There are adequate provisions in our statutory laws and in the decisions rendered by the Supreme Court of Idaho to protect established appropriative right. The supreme court in the case of *Bailey* v. *Idaho Irrigation Company*, 39 Idaho 354, stated: "An appropriator is entitled to have the full quantity of water called for by his appropriative right in the natural flow, or in his ditch and canal, in such a way that he can enjoy its use," and he is entitled to protection from the courts against any material interference with this flow of water by which his right to its use is substantially impaired.

Protection of the appropriative right likewise applies to acts committed on tributaries of the stream that infringe the right.

The supreme court stated in the case of *Malad Valley Irrigation Company* v. *Campbell*, 2 Idaho 411, in its earliest reported decision relating to controversies over water rights, that "If persons can go upon the tributaries of streams whose waters have all been appropriated and applied to a useful and legitimate purpose, and can take and control the waters of such tributaries, then, indeed, the sources of supply of all appropriated natural streams may be entirely cut off, and turned away from the first and rightful appropriators. To allow this to be done would disturb substantial vested rights, and the law will not permit it * * *."

Protection is afforded against infringement of the right that applies to quality as well as quantity of waters. It has been held that while a prior use of waters of a stream for certain purposes, such as mining, necessarily contaminates the water to some extent, such contamination cannot be carried to such a degree as to inflict substantial injury upon another user of the waters of the stream (*Raondal* v. *North Fork Placers*, 60 Idaho 305).

In the case of *Hill* v. *Standard Mining Company* (12 Idaho 223) the court said the extent of deterioration in quality that necessarily affects the use of water for beneficial purposes and whether the deterioration injures another are matters of fact.

Water rights can be lost through abandonment, statutory forfeiture, adverse possession and use and estoppel.

Our statutes provide for an adjudication of water rights. This can be done by an action to ascertain, determine and decree the extent and priority of a water right, which is real property appurtenant to land irrigated thereby, and it partakes of the nature of an action to quiet title to real estate.

Ground water or subterranean water, as it is sometimes called, may be acquired by appropriation under Idaho law. The legislature in 1951 enacted a statute relating specially to the appropriation of ground waters and administration of rights to their use, and amended and substantially enlarged the act in 1953.

In conclusion, let me say that on the whole Idaho has adequate legal safeguards to protect an established right to the use of water and adequate laws to guard against waste. These laws, however, are flexible and must be interrupted in their application to a particular set of facts.

Needs and Responsibilities of Industry as a Water User

(By Ray W. Kueneman, director of research and development, Food Division, J. R. Simplot Co.)

I am not going to attempt to catalog the exact quantities of water required by the various industries in our State nor their disposal problems.

This is beyond the scope and time allowed and indeed I am not qualified to speak for all of the industries in the State on these facts or even all the phases of the food industry of which I am a part.

However, there are some facts and concepts that we must all recognize if we are to grow as a State and expand our economies.

Nothing is more important than water to modern industry. Waters of varying qualities and quantities are essential to our every phase of life—from the production of the basic materials—steel, fuel, lumber, food, chemicals, or plastics—to the finished products that are fabricated.

Some 60 to 70 billion gallons a day are used in our industries of the United States. Much of it does nothing more than cool other liquids, furnaces, chemical reactions. Large amounts are used to transport materials within the factories and mills. Much of it is used as a part of the chemical reactions and some becomes a part of the end product being fabricated.

As these many products leave industry, they help to satisfy the ever-increasing consumer demand. The 170 million people whose needs and wants are satisfied are the economic life blood of the Nation and water is an integral part of this economy. About 400 gallons of water are used by industry for each individual daily.

Industrial use of water will increase as the population increases. Many estimates have been made to assess this increasing demand.

It appears that the industrial water demand will follow the predicted increases in national output of goods and services, which is presently set at about 3 percent.

Since this is a compounding figure, output will double in 23 years. Industrial usage will probably double in 21 years. Expressed in figures the picture looks something like this:

Daily use—Billions of gallons of water

Allocation year	1900	1955	1975
Irrigation	20	120	170
Rural needs	2	5	7
Public services	3	17	30
Industrial usage	10	60	115
Steam and electric power	5	60	131
Total	40	162	523

Thus we see that farming and rural use is increasing the most rapidly; that industry and power are close behind and public usage increasing at a lower rate. Recent surveys show that the total water supply today has not changed materially over the past 75 years although there have been area shifts in availability. Since fresh water supplies in the United States are not unlimited, application of new storages, reuse and artificial regulation must be applied to meet these increasing demands. Population and industry shifts will occur and we may well expect that Idaho's vast reserves will share in this as growth for the State, by population and industry.

This increased demand for water will impose changes on all of us. In the home we will use better regulation, fix leaky faucets, cook with pressure cookers instead of full pots of water, use more prepared foods.

Industry will do likewise on a grand scale and is doing them now. Manufactured products are being made with less water, less waste. Water will be reused more—a great deal of modern technical development is coming to light now on this phase as a produce of industrial research dollars and industry is learning to improve the quality of waste water it is returning to our resource pool. Industry, unlike agriculture, returns much of the water it uses and uses water of different grades of quality, for water is an essential cost item.

Figures developed by a consulting firm showed that water costs by an industry in Ohio reached 0.04 per dollar of manufactured goods. A simple extension of this for the industry involved doing a billion dollars' worth of business shows how important a cost factor can be—$40 million annually.

To recap our national supply picture, we have some 4,300 billion gallons per day by precipitation, of which some 3,000 billion are lost by evaporation. This leaves a 1,300 billion balance. True, we are using less than 200 billion today, or 12 to 16 percent, but it is not always available in the areas we would like to have it. Present national supply is estimated at six times the existing consumption. However, in the 17 Western States the total supply is only about 4 times the usage. In 1954 it was estimated that in California the use of water for all purposes exceeds safe yields of developed supplies by 15 percent.

At the present time, large communities in southern Arizona are faced with the problem of purchasing millions of dollars worth of farm lands adjacent to them in order that the water now being used in farming operations can be diverted for city consumption to meet the press of expanding population over the next few years.

How much water does modern industry use?

One-fourth gallon for every pound of rayon

One-fourth gallon for every pound of butter

Fifteen to fifty gallons for every pound of paper

Two to two hundred fifty gallons for every pound can of food

One gallon for every pound of chickens killed

One hundred twenty-seven gallons for every pound of hog slaughtered

Seventy-five one-hundredths gallons for every quart of milk bottled

Ninety gallons for every pound of wool scoured

Four hundred gallons for every guest room per day for hotels.

WATER IN FOOD PRODUCTS MANUFACTURE

Apart from crop production, water is one of the most important requisites of successful food processing—one of Idaho's important industries today.

Water is used for transporting foods into the plants from initial receiving points. It is used for washing and usually there are a number of washing operations during the processing steps. It is essential for the generation of steam usually the key function of many of the processing steps. It is used as an aid

to cutting or subdividing, as a medium of heat exchange in heating and cooling operations. It is essential for condensing vapors, for fire protection, for cleaning the plants and equipment and as an ingredient in finished products.

Availability of adequate water supplies of suitable quality is a primary consideration in establishing a plant. It must be adequate for expansion and available in sufficient quantities to meet competition from expanding residential and industrial users who may reduce the supply critically.

In view of situations such as these, people in the food industry must be concerned with quantitative aspects as well as quality factors from the standpoint of adequacy as well as operating cost.

Industrial users may operate their own water supply or purchase it from a water company or use a combination of both.

In any case, the food industry should use water meeting United States public health standards for potable water.

Surface waters from lakes, streams, and reservoirs may be high in organic matter, and ordinarily low in mineral content and may be contaminated from the microbiological standpoint.

Subsurface water from shallow wells may be variable in organic matter, variable in microbial content and are ordinarily low in mineral content. Deep well sources are usually low in organic matter, bacterial count and quite often high in mineral content.

Most of the available figures for quantities of water used for food processing are estimates. In figures assembled in 1951 from a large number of food canners there was a tremendous variation in quantities of water used to process various products.

	Gallons	
	Per ton	Farm weight
Sweet cherries	5,540	11,080
Peaches	1,275	13,600
Plums	3,200	9,600
Corn	1,100	1,370
Peas	3,075	13,400

Using canned corn as a basis and converting to conditions in the State of Idaho prevalent in the last few years, we would find some interesting facts:

Sixty thousand tons of corn from 14,000 acres.
Two million, one hundred thousand cases of corn if all canned.
One hundred and one million six hundred thousand servings of corn.
Eighty million gallons of water to process it.
Excess of 1,000 farms involved.
One hundred-day crop.
Forty-day season for processing.
About 3 quarts of water/serving.

The farmer uses about 800,000 gallons of water per acre to rais his crop or about 64 gallons per serving.

Freezers use approximately the same quantities as canners and dehydration slightly less (Caldwell uses about 1,000 gallons per ton of potatoes processed).

The above figures show a widespread variance that can be attributed to differences in processing methods particularly in use of fluming and recirculation.

The food processing industry is expanding rapidly in Idaho and an increasing amount of one of the State's most important crops is now being processed. Varying figures from 25 to 35 percent of the potato crop in Idaho are now reaching the consumer in processed form helping to stabilize the marketing conditions and stimulating consumption and production.

This industry is a large water user with many unsolved problems, however, these problems are receiving attention and with time and research assistance from within the industry and other outside sources should be able to take its rightful place as a water user. All industries have disposal problems when they have finished using water, as does agriculture with waste water problems, rising water tables and possible contamination by misuse of fertilizers and insecticides, as do the cities and all other segments that go to make up the total of water consumers.

Two major elements are involved which can roughly be classified into two broad groups of organic and inorganic. The organic group lead to an upset of the oxygen balance and we measure it in terms of b.o.d., or biological oxygen demand. When the organic loads are too heavy to be consumed by the ubiquitous micro-organisms that Mother Nature has supplied, the biological balance is upset and other forms of water life are affected. In other instances excessive populations of other classes of micro-organisms may come in majority upsetting the biological balance. In any event, insufficient oxygen is available and hence we have a useful tool with which to measure when we have sufficient data and can apply it properly in relation to the other factors of the problem.

The inorganic wastes may produce other toxic conditions to upset the health of the water or its normal biological activity.

However, we must recognize that the source of our water, the river, as the grand receiver is affected by all users: whether it is used for washing dishes, scrubbing floors, sanitary purposes, washing cars, processing foods or manufacturing, water becomes soiled. It is inevitable and how else can the wastes of living be disposed of? Water can become contaminated and be a menace to public health. It can be upset biologically and become a nuisance from nonpathogenic bacteria without health hazard and can recover its balance from the latter within a matter of miles. These are two different things and each must be kept in its proper perspective.

The degree of upset is affected by many factors. The amounts of water flowing in a river—how much is removed and not returned. How much is held back in dams for later use or other use as well as losses due to flashy runoffs which may be poor land management upstream.

Not to make efficient use of water flowing by us daily would indeed be poor management.

Each day's flow is futile if we do not use it. Nonuse is as much a waste factor as abuse. Balanced use is true conservation.

As water creates our economy, so does it serve to carry away the wastes, which are also a part of our economy. Therefore, we must use the ability of water to dispose of wastes to a reasonable capacity.

We are therefore faced with at least three considerations regarding the condition and quality of discharged water:

1. Possible health hazard.
2. Suitability and cost to subsequent users.
3. Effect on wildlife and recreation.

Everyone agrees that discharges which actively threaten health should not be tolerated. In our enthusiasm we should not impose measures and restrictions on agriculture and industry which are more severe than Nature ordinarily imposes on them herself. Neither should we overlook the fact that technical know-how does not exist for the reasonable solution of some of the more complex industrial and municipal disposal problems. It is important to recognize that these substantially technical steps cannot be isolated from the more fundamental nonlegal issues of how our water resources should be used and managed. This involves more economic and hydrological data than we now possess. This is why many people feel that current efforts to draft a "model State law" are premature. If we push too fast in this direction, there is danger that we may wind up in extreme positions—too restrictive or too flexible, leaving too much to the discretion of administrative commissioners.

We are now in a very cooperative state of conditions. A great deal of thought and effort, man-hours and time have been spent on this problem.

Much of our present industry has been established in Idaho for some time and it is fair to say that we in industry are cognizant of our problems and that jointly and in cooperation with existing agencies have sought and are seeking solutions to our problems. A great deal has been accomplished and there is much to be done in the future.

However, as we expand and new industries are attracted to the vast resources of Idaho, it is essential that the ground rules be clarified as well as pointing out the other phases of our resources in order that all interests are justly and reasonably protected.

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History and Function of Interstate Compacts

(H. Calvert Anderson, executive secretary, Columbia Interstate Compact Commission)

Areas bound together by common geographic and economic ties but divided by artifically created political boundaries have long sought a method of cooperating within the framework of government for the mutual benefit of all.

This need for a method of harnessing common effort has brought about the evolution of what we now call the interstate compact concept as a means whereby contiguous and related areas may seek solutions to common and specified problems.

The compact principle developed out of the need and desire of sovereign States who are part of a federalized confederation or union to have a method of working together as individual units without involving the remainder of that union. The method of achieving and putting into effect an interstate compact grew out of a realization that any central government based on such a union of soverign States must exercise control over combinations of those States.

The idea of individual sovereign States who were part of a federal union combining to solve their common problems was used by the units of the Germanic Federation and by the Swiss Cantons.

This method of solution was familiar to the men who pioneered the colonies of the American new world. During colonial times, nine separate agreements were reached between the various colonies all of which were negotiated by representatives of the colonies themselves and put into effect with the permission of the British Crown and the Privy Council.

After the colonies had achieved their independence and set up their own Federal Government, they desired to retain this time tried and proven method of operation and therefore wrote into article VI of the Articles of Confederation a provision that—"No two or more States shall enter into any treaty, confederation or alliance between them, without the consent of the United States in Congress assembled, specifying accurately the purpose for which the same is to be entered into, and how long it shall continue."

This provision in its language and terms recognized the compact principle and compacting method which were mentioned earlier.

Under this provision of the Articles of Confederation, four compacts were entered into by the fledgling States. Three of these dealt with the settlement of boundary disputes, but one between Maryland and Virginia, made in 1785, dealt with navigation and fishing problems on common waters and is still in effect.

When the convention met to draft our present Constitution, the delegates recognized that at least 11 boundary disputes were pending which could be best settled by agreements among the States themselves. They therefore retained the principles enunciated in the Articles of Confederation, but streamlined the language to say in section 10 of article I of that Constitution—"No State shall, without the consent of Congress, * * * enter into any agreement or compact with another State."

In these early days the compact agreement device was looked upon principally as a means of settling boundary disputes. In the 142 years from 1789 to 1921, 36 interstate compacts were negotiated and ratified, largely dealing with boundary lines and boundary waters.

In the early 1920's, however, two compacts were passed which vastly broadened the whole concept of this field of activity and resulted in 65 compacts being ratified in the 45 years from 1921 to 1956. One of these compacts was the Port of New York Authority which showed how interstate agreement could be used to establish a continuing and functioning agency. This compact between New Jersey and New York established the Port of New York Authority in 1921, which authority still operates that great port today.

The Colorado River Compact in 1923 pointed the way for States of a river basin to unite not only in apportioning water but in setting up a mechanism whereby they could work together to the continuing mutual advancement of the entire river basin.

The principle of need for united development in a common river basin, even though that basin is divided by political boundaries, has been illustrated again and again for hundreds, even thousands of years. History since its beginning has been made and written around such great rivers as the Nile, the Rhine, the Danube, the Volga, the Indus, the Congo, the Mississippi, and many others.

In too many instances this history has been one of continued strife between jealous political entities splitting river basins into parts, rather than coordinated development for the ultimate good of all citizens of the basin.

If the States of the American federation can perfect methods of river basin development among themselves and then apply those principles and ideals to joint development of such international streams as the Columbia and the Yukon, they will have written a permanent chapter in the history of human progress.

With this background of need for, and a proven method of river basin development, recognition of the value of an interstate compact came relatively early in the history of the Columbia River Basin. The first formal proposal for such a compact was made by a Governor of Oregon in 1911. In 1925 Congress gave consent to the States of Idaho, Montana, Oregon, and Washington to negotiate such a compact, but no action was taken. The idea was revived in 1942, but was sidetracked by World War II. In 1950 negotiations leading toward the present development began anew.

In 1952, Congress granted consent to the States of Idaho, Montana, Oregon, Washington and Wyoming to negotiate a compact and named a Federal representative. This consent was broadened 2 years later to include Utah and Nevada. State legislatures set up their negotiating commissions in the period from 1951 to 1953 and serious work toward drafting a compact began.

Negotiating commissioners from the seven States signed a compact draft on January 15, 1955. This draft was ratified by Idaho, Nevada, and Utah, but failed of necessary approval in the other States. The negotiating body continued its work and signed a revised draft on December 4, 1956. This draft failed of ratification by any State.

One of the problems facing the Columbia Interstate Compact Commission has been the changing complexion of its membership, brought about by political shifts and from other causes. Commissions are appointed in different manners and for different terms by the various States.

Idaho commissioners are appointed by the Governor and the same five men have served since 1953. Montana commissioners are also named by the Governor and six men have served since 1953 with three commissioners added to broaden the scope of the group in 1957. In Oregon, four members each are named by the Governor, the senate and the house of representatives. With a 12-man commission, Oregon has one member who has served since 1953 and the remaining posts have been filled by 22 different individuals. Nevada members are named by the Governor with two having served since 1953 and the shift in the other member being caused by a reorganization in State government. Utah's commissioner was elected Governor in 1956 and was replaced by a man familiar with past history of negotiation. Washington names two from the senate, two from the house of representatives and one by the Governor. One man has served since 1953 with 12 others having filled the remaining four posts. Wyoming has one commissioner by law, with assistant. No significant shift has taken place in this representation. The same Federal representative and legal advisor served from 1953 until death removed both late in 1957.

These changes in membership have made negotiation difficult on the one hand because of the need for familiarization of new members with past problems and accomplishments. On the other hand, it has brought before the Commission varying points of view, insuring consideration of all aspects of the various problems.

In all of its attempts to reach a satisfactory compact, the negotiating commission has had certain fundamental objectives. These include provision of a means for the States to cooperate in local planning for and direction of river basin development; safeguards of water rights and water supplies, protection of water supply while at the same time promoting the fullest use of that water for the benefit of the entire basin; and wise conservation and development under local control.

These overall objectives have been broken down into specific fields of negotiation which include: establishment of priorities of water use, allowable depletion for various uses, control of pollution, provision for regional planning, coordination of water operations, protection and enhancement of fish, wildlife and recrea-

tional values, development of hydroelectric power, control of out-of-basin diversion, promotion of solutions to international porblems and the establishment of a permanent functioning interstate commission.

There has existed, almost from the beginning, general agreement among the States on several important fundamentals. Although there do exist some shades of disagreement, these might be listed as including:

The most important factor in the continued development of the Columbia River Basin is the conservation of an adequate supply of clean, cool water available in perpetuity for use as water in all of the functions which water, and only water, can perform.

Priority for beneficial consumptive use of water for domestic, municipal and agricultural purposes in the arid upstream area of the basin over use for nonconsumptive purposes such as power production downstream. Definite limitations on allowable depletions for these purposes are to be considered, however:

Need for unity in basinwide planning and in seeking solutions to international problems.

Need for control of any proposals for diversion of waters of the Columbia River system to other river basins.

Need for a uniform and sane code of pollution control.

Need for the full development and coordinated use of storage facilities for all feasible purposes.

The problem of dealing with hydroelectric power generation, transmission and development has been the most difficult facing the commission. If any one factor has been responsible for the failure of State legislatures to ratify the compact in the past, it has been that of hydroelectric power.

Low-cost hydroelectric power is the traditional foundation of industrial development in the Pacific Northwest. This power is produced at federally built and operated multipurpose projects, at private power company projects and at local public power projects. It is distributed over Federal, private, and local public systems and marketed by private and public entities. There is a wide variation among the States in the degree of participation of public and private entities in the entire power picture.

All of these factors have faced the Commission in its attempt to reach a solution to the hydroelectric problem. Proposals have ranged from establishment of an interstate commission to take over the Federal distribution system and be endowed with authority to issue revenue bonds, build and operate projects of its own, to complete omission of the hydroelectric problem.

There are arguments on the one hand that a compact which does not deal with hydroelectric power will not encompass the full field of development. Other areas of thought say that the hydroelectric development is not sufficiently mature to be capable of resolution by compact at the present time and that all the other benefits to be gained through association of the States together should not be sacrificed on this one issue.

Upon the resolution of this issue will depend much of the success or failure of the compact proposal in the immediate future.

The compact commission today faces the challenge of making clearly understood the conviction that, in the ultimate, what is best for the entire river basin is best for all parts of the basin. If we have the courage and foresight to stand by that principle, we will not only have contributed greatly to the future of this river basin, but will have made a deep mark on history.

Senator DWORSHAK. The next witness is Bruce Bowler, representing the Idaho Wildlife Federation, to discuss wildlife.

STATEMENT OF BRUCE BOWLER, IDAHO WILDLIFE FEDERATION

Mr. BOWLER. Mr. Chairman, Senators Kerr, Young, Dworshak, and Church, my name is Bruce Bowler, of Boise, Idaho.

I represent the Idaho Wildlife Federation, an organization in Idaho composed of 85 local clubs which have a combined membership of 22,000 persons, interested in the wildlife resources of the area. We are grateful for the opportunity to present this viewpoint to the U.S. Senate Select Committee on National Water Resources, the purpose of which I understand is to study and analyze the water needs of the

Nation and determine the requirements for the future, with particular view to the year 2000. It is certainly splendid that the committee has convened these hearings and much of value can surely be accomplished for the general welfare of our Nation by your honorable Senators taking time for this mission.

Life without water is an impossibility. Water is an equal essential in the Big Three required for life on this earth, the other two being the land and the air. Too often in the past utilization of these three basic elements of our environment; namely, the land, the water, and the air, has overlooked the importance of wise husbandry of these basic resources. Man apparently has been so busy looking at the individual trees, that he has failed to see the entire forest. He has indicated a failure to understand that he is only a trustee of mighty important values to others in the future. Some men talk about water as though they could own it or take it with them, when really they can only have a very temporary use of it.

The CHAIRMAN. You know that temporary use of it is getting more temporary all the time for each one of us?

Mr. BOWLER. Yes, Senator.

The CHAIRMAN. All right.

Mr. BOWLER. To force the recognition of this trust should be one of the objectives of our national water policy.

Too much utilization and development of these basic resources, on which all life is dependent, has been concerned with only the quantitative aspects of the resource and not enough concern has been shown for the qualitative characteristics of these elementary things. Ruined land, water, and air is of little value to our people, and too much of that course of utilization is being followed. If we do not show more protective care of the qualitative aspects of our land, water, and air, America can sometime find itself in the same, or even worse situation than the overpopulated regions of India and China.

The CHAIRMAN. Or the smaller areas of some portions of our own country?

Mr. BOWLER. Yes, Senator, that is true. It is encouraging to note the concern of this good committee in its studies concerning the water problems of the United States and the awareness that some sound policy, and if necessary, law needs to be established at the Federal level.

Water, along with the air is of a very transistory character, and the Federal Government properly concerns itself in the interstate movement of waters and air. Radioactive fallout is teaching things here. By improper use of our land and water we are in too many places learning the hard way about the transitory character of the land, evidenced by the millions of tons of soil that from time to time move in interstate waterways. A false doctrine which has also found its way into water policy and law, is that water is subject to consumption. Really, water can never be consumed, it can only change form and places, and someone else always feels the effect of the use of water by others, and such applies to underground as well as surface waters. The objective should be to so wisely use the water that others do not unnecessarily suffer from the prior uses, and man today has the know-how to accomplish this objective if he will understand that he owes a duty to his neighbor to so use the water so as not to make it unfit

for others' subsequent use. These are basic principles that should be a part of our national water resources policy, and where needed, bolstered by the strength of Federal law.

The time has already come in America when there is not unlimited supplies of land, water, and air, and our increasing population has posed serious trouble in many areas already. A program for future avoidance should be our prime objective, and this is going to take some teamwork, and regard for the other fellow's rights under the multiple-use concept of our water resources, and to this end we wish to contribute our thoughts to the record before the committee, as it concerns our wildlife resources.

Senator CHURCH. May I interrupt there to say just about a month ago I was in Scotland for a very brief stay, and I went from a very heavily congested industrial area to a large and prolonged residential district on into a countryside. This was a private countryside, where the Grigadoon is located near Charlie Burns' cottage, and the water in that river is just as clear and pure as the water in the headwaters of the Salmon River, in the high upcountry of Idaho. I asked about the fishing in the stream and they said the fishing was excellent in spite of the heavy concentration of industry and population, which I think does demonstrate that where the people as a whole are determined to keep the water pure, no matter how complex the problems, it can be accomplished.

Mr. BOWLER. I think that is wonderful; it is a truism.

Pleasant environment for life is perhaps one of the most important factors for our civilization, and this applies not only to the species of homo sapiens, but also to the fauna and flora known as wildlife. This wildlife contributes much to the culture of mankind, so much in fact that it is worth conserving some of the desirable environment for the special purposes of wildlife propagation. It is never progress of a people to destroy in the process that which makes their environment a desirable place to live. This principle has often been lost sight of in the view that progress must necessarily eliminate wildlife.

Already many good fish and game management practices in today's modern world have demonstrated the high degree of compatibility of man and wildlife in the same environment, and all it takes is the wise management of the basic resources with a recognized consideration for both. We are actually making great progress in finding that we can have our water resource development projects and at the same time conserve, and in many instances improve, the biological benefits of a river, but this has required the multiple-use recognition and the willingness to make substantial capital investment for all of the various purposes involved.

True, these things have to be done on a relative basis, but what we as wildlife people ask, is that there be eliminated from policy the old-fashioned concept that in water development projects the wildlife opposition must just be overcome. That has been entirely the wrong view and has been too prevalent for too many years in major industrial construction projects of our rivers, and the same erroneous view has been followed respecting the disposition of industrial wastes resulting in pollution of our waters.

The people who enjoy the benefits of a good wildlife resource are willing to pay the extra expense required in accomplishing the com-

patability between industrial uses of water and those needed to sustain a satisfactory wildlife as it is to man, and each needs the other, and it is fortunate that our public aspects in waterways and wildlife still obtain in this country. It is too bad that some of our possible water resource developments have been frustated by the shortsightedness of proponents not recognizing that important wildlife values were involved, and were not willing to make the necessary adjustments locationwise and investmentwise to accomplish both.

We can still have our reclamation, our hydroelectric power, our industrial processing using water, our flood control, and navigation, together with a good biological wildlife resource in the river systems if wise, considerate and fair planning is exercised toward all of the multiple-use factors involved. And believe me, no river in this Nation properly belongs dedicated for any one of these uses alone. The biology and wildlife aspects of a river should always be considered, and relatively evaluated in river construction projects on an equal basis with the other uses. When such a policy is followed, we will be making real progress as wise husbandmen of our water resources. Ordinarily, wildlife needs in a river can satisfactorily be met by fish passage facilities and a continuous minimum flow of clean water to supply circulation and oxygen to the pools in maintenance of the beneficial use of the fishery.

The continuity and natural regeneration capabilities of wildlife is what helps to give it its great value in perpetuity for generations yet to come. This is reason why no species should be considered expendable in connection with dam constructions or other impediments to natural migrations of such a great fishery as that of the salmon and steelhead in the Columbia River system. The perpetuation of that important part of the culture of the Northwest resulting from the annual ascension of salmon and steelhead into the headwaters of the Columbia River system will be worth whatever it might cost to the generations of our people yet to come. We would be derelict if, in this age, we, by hydroelectric or flood control dams on the Columbia River system, caused or allowed these great fish runs to terminate, and the relative valuations of such could never be properly sustained. The Army Engineers prognosis of the power picture in the year 2025, shows that with full development on the Columbia, hydroelectric power will only be approximately two-elevenths of the total needed electric power. What a foolish sacrifice it would be to stop the salmon and steelhead in the Columbia River for such full development for 65 years for that percentage of the power needed by the people then, when the salmon and steelhead could be supplying them benefits for hundreds and thousands of years yet to come.

I am sure we all have noticed the increasing interest that the American people have in the past few years shown in recreational sports involving wildlife and the biology, and the cleanliness and availability of waters. Fishing, hunting, boating, swimming, and water sports all evidence great increases. This is a desirable and important development so far as the general welfare of our Nation is concerned. The wholesome recreation afforded by these things is a good sign for future progress of our people. It should also be recognized that our people with outdoor and wildlife recreational interests constitute the majorities, in other words, the "fish folks" are most of our people, and

their interests should be considered along with that of the industrialist.

Further, it is not to be overlooked the scope of the basic economy that is now being provided from the recreational utilization of wildlife resources. The record in these committee hearings will show significantly large figures in terms of dollar economic exchange resulting from such activity, showing it is healthy for the people and healthy for the economy, and it can be expected that the increase will be tremendous. Automotive and tourist industries have a big stake in wildlife resource continuity. It is desirable that such be encouraged. It helps to continue the supplying of something of the beautiful, and of a wholesome character that is highly desirable in a good civilization. The wildlife has proven itself very adjustable if just given an even break on environment for good habitat, and the idea that the wildlife should have only that which might be left over after man takes all he wants, is most certainly unprogressive thinking.

Speaking for the Idaho Wildlife Federation, I believe that these fundamental factors for recognizing wildlife's entitlement to good environment is of prime importance to the policy of Congress and this Nation in future developments concerning our water resources. We thank you for being invited to participate and make this statement a part of your record.

Thank you.

Senator DWORSHAK. Next we will hear from a representative of the Fort Hall Business Council of the Shoshone-Bannock Tribes. I don't know who is to testify.

STATEMENT OF EDWARD BOYER, CHAIRMAN, FORT HALL BUSINESS COUNCIL, SHOSHONE-BANNOCK TRIBES

Mr. BOYER. Senator Dworshak, Senator Young, Senator Kerr, and Senator Church: I am not going to take too much time to say what I want to say. In the past and up to the present time the Shoshone Tribe of Indians of Idaho has maintained the water rights with the protection of the Federal Government according to our treaty. We want to go on record in the same manner as we have before and in the future to utilize our water resources. I am sorry to say that I cannot submit any detailed statement at this time without the tribal consent.

That is about all I want to say. Thank you.

The CHAIRMAN. Do you want to let the tribe submit a statement of its position?

Mr. BOYER. We would like to later on.

The CHAIRMAN. You do that and it will be made a part of the record.

Mr. BOYER. Yes.

Senator DWORSHAK. Mail that in a week or so to Senator Kerr's office in Washington, D.C.

(The material referred to follows:)

STATEMENT OF SHOSHONE-BANNOCK TRIBES

The Fort Hall Indian Reservation is located in the Snake River drainage basin near Pocatello, Idaho, and is a vital part of that great agricultural area in southeastern Idaho.

Under their original rights, and through the Congress and the Courts, these Indians retain certain prior irrigation water rights that are vital to their welfare.

We, therefore, welcome the opportunity to remind the Congress of the United States, and the people of Idaho that the Shoshone-Bannock Tribes are still in existence, that they feel keenly about their water rights, and that it is their sincere desire to have their rights and needs considered in any statewide or nationwide planning for the development of water resources.

There are several irrigation projects on the Fort Hall Indian Reservation which are now receiving water; however, in each case, the available water supply will not permit the full utilization of all lands under the projects. There is one project under construction. This is the Michaud unit of the Fort Hall project, which project, as set up, will receive a full water supply. There are several other projects which have not been constructed, which should receive immediate consideration by the Congress looking toward their full development. The following gives a detailed breakdown on the status of each of these projects (the numbers refer to the attached map):

1. FORT HALL PROJECT

This project was authorized under the Act of March 1, 1907 (34 Stat. 1015–1024). The project was designated at 47,045 acres by a congressional act in 1948. The authorization act established a duty of water at the farm of 3-acre feet per acre per year; however, a delivery of 3.5 acre-feet was authorized by the act if water is available. At the present time, there are approximately 13,000 acres of idle land on the project. There are several reasons why these lands have not been brought under cultivation. The principal reasons being rough topography, land status, and size of farm units. The present water supply is derived from two storage reservoirs (the Blackfoot Reservoir and the Grays Lake Reservoir) and normal flow rights from the Snake River, Sand Creek, and the Blackfoot River. There can be no question but that the present water supply will have to be augmented as soon as all lands on the project are brought under development. There are three possible sources for this supplemental water: (1) Additional stored water either on the main stem of the Snake River or its tributaries; (2) increasing capacity of the Blackfoot Reservoir; and (3) development of underground water supply. It may be that a combination of two of the above water sources will have to be worked out. A study of the present water supply indicates that approximately 40,000 acre-feet of additional water will have to be supplied to this project for full development.

2. MICHAUD UNIT (UNDER CONSTRUCTION)

The Michaud unit of the Fort Hall project is now under construction and comprises 21,000 acres of irrigable land. The water supply for this project is derived from water stored in the American Falls Reservoir and the Palisades Reservoir which have been constructed by the Bureau of Reclamation, together with 22,400 acre-feet of ground water to be obtained within the limits of the Michaud project. The authorization act for the project (68 Stat. 1026–1029) sets aside 83,900 acre-feet of storage in Palisades Reservoir and 47,700 acre-feet of storage in the American Falls Reservoir. Diversion duty for this project has been set at 4.6 acre-feet per acre, which will provide 3.5 acre-feet per acre at the farm. It is anticipated that this project will start delivering water in 1961 and be completed in 1970. No additional water supply will be required for this development.

3. AND 4. MINOR UNITS

There are three small units constructed within the limits of the reservation: One on Lincoln Creek, one on Ross Fork, and one on Bannock Creek. Total irrigable area under these three units is 7,380 acres; however, only approximately 1,700 acres are now being used because of the lack of water supply. The average farm duty on the areas irrigated is somewhat less than 3 acre-feet per year. Attempts have been made to locate storage reservoirs and underground water supplies on the Lincoln Creek and Ross Fork Creek areas; however, studies have proven that such a development would be uneconomical at this time. Under the congressional act of 1948, a reservoir was authorized on Bannock Creek. Surveys are now being conducted for the purpose of justifying funds for this construction. With the construction of this reservoir, the complete development in the Bannock Creek area can be realized. It is anticipated

that the storage reservoir will provide a usable water supply for 2,000 acres providing an estimated 8,000 acre-feet per year.

5. FORT HALL BOTTOMS

The Fort Hall Bottoms comprise approximately 10,000 acres of bottom lands which provide winter grazing for livestock owned by members of the tribe. The development in this area would consist of combination of drainage and irrigation to provide a controlled water table to permit the growing of better forage crops. It is anticipated that this development would result in an actual saving of water through the reduction of the evaporation losses now existing throughout this area. The duty of water would be 2 to 3 acre-feet per acre per year.

6. NEW AREAS (UNDERGROUND WATER DEVELOPMENTS)

While no detailed surveys have been made so far, there are easily 35,000 acres of land which can be brought under irrigation on the Fort Hall Reservation through the development of the underground water supply. These lands would require a duty of 3.5 acre-feet per acre per year.

SUMMARY

The following tabulation shows at a glance the Fort Hall situation. The ultimate development of irrigation possibilities requires the construction of facilities for the subjugation of some 86,680 acres of prime agricultural land. Of this amount the 21,000 acres included in the Michaud project is now under construction, leaving 65,680 acres of virgin land to be developed.

With regard to water requirements, the attached tabulation shows that 200,000 acre-feet per annum is now available for use at the farm at Fort Hall. This means that the ultimate project will require the development of an additional 230,000 acre-feet per annum at the farm.

These are the facts, therefore, which we wish to bring to the attention of your committee in the hopes that proper consideration can eventually be given to this important segment of the State of Idaho. These figures and data have been furnished us by the irrigation engineers of the Bureau of Indian Affairs.

Project	Irrigable now irrigated	Acreage ultimate	Under requirement at the farm (acre-feet/year)	Present supply at the farm (acre-feet/year)	Additional water required at the farm (acre-feet/year)	Comments
Fort Hall	34,000	47,045	3.5	120,000	50,000	Additional supply to come from storage and underground supply.
Michaud		21,000	3.5	74,000		Complete water supply.
Minor units	1,700	7,380	3.0	6,000	18,000	Additional water supply questioned.
Bannock Creek		2,000	3.5		7,000	Complete supply available project authorized by Congress 1948.
Fort Hall Bottoms		10,000	3.0		30,000	Development will actually increase basin water supply.
New areas	35,700	122,425	3.5	200,000	230,000	All underground development.

CONCLUSION

The amount of land and water involved on the Fort Hall Reservation is a very small percentage of the irrigable lands and waters used in Idaho, but it is a vitally important matter to the Indians and they rely upon their treaties and the decisions of the courts establishing their priorities and submit that provision must be made for ample water for all irrigable lands on their reservations.

Land irrigated and brought under cultivation on the reservation adds as much to the overall development as does lands that are irrigated any other place.

The Indians look to Congress to protect them, otherwise they are helpless and the greed for water is so great that the Indians are not able financially or

otherwise to compete with the whites, irrigation districts, and industry, and they ask and expect the Government, through Congress, to protect them, not as a matter of sympathy, but as a matter of common honesty and the carrying out of the contract obligations of the Government.

Respectfully submitted.

EDWARD BOYER,
Chairman, Fort Hall Business Council.

Senator DWORSHAK. We will hear now from Vaughn Anderson, chief, engineering and sanitation section, Idaho Department of Public Health, on domestic water supply, pollution, and health problems.

STATEMENT OF VAUGHN ANDERSON, CHIEF, ENGINEERING AND SANITATION SECTION, IDAHO DEPARTMENT OF PUBLIC HEALTH

Mr. ANDERSON. Senator Kerr, Senator Young, Senator Dworshak, and Senator Church, I am Vaughn Anderson. I am employed by the Idaho Department of Public Health.

I would like to say or begin with something not contained in my paper.

In the interest of brevity I would not repeat many of the things which have been mentioned heretofore as far as multiple use and water pollution are concerned, and would like to confine most of my remarks to the domestic water supply situation within the State.

The Idaho Department of Health has records of approximately 280 public water supply systems which serve an estimated 370,000 persons within the State. Of these, there are 244 supplies, each of which serve communities of 100 or more persons. Sources of these supplies include streams, lakes, springs, and wells. For the most part, Idaho communities are not faced with major difficulties in obtaining adequate quantities of domestic water and in most cases, water supplies are of excellent quality. It is becoming apparent, however, that difficulties are arising in some areas in maintaining and developing sources of water of adequate quantity and high quality to meet the needs for increased water usage, and expanding population and industrial development.

I might mention that part of this industrial supply cannot be separated from the domestic supply since some of it is used through the same distribution system and requires the same quality and commonly the same source. I won't go into detail. I have listed here a number of areas and using various cities as examples but I would like to briefly point out with emphasis on the fact that we do not have a lot of major problems. I would like to point out some of the problems which we have encountered.

In the northern part of the State I have listed as Bonner's Ferry and Sandpoint area we have had indications of watersheds being damaged by improper logging methods and roadbuilding activities in the sheds and in order to handle the damage that was done it has been necessary for both of these cities to supplement their watershed source and to install rather elaborate treatment.

I won't discuss most of these. We do have two rather minor in size areas in the State in which water is a little bit difficult to obtain and this is in the Moscow-Genesee area in Latah County and in the area of Grangeville, Craigmont, and Cottonwood in Idaho County, the reasons being the geological formation is such that it is some-

R.35E.

R.34E.

T.3S.

R.33E.

T.4S.

R.32E.

T.5S.

T.6S.

R.34E.

R.35E.

T.7S.

T.8S.

T.8S.

T.9S.

T.9S.

T.10S.

T.10S.

R.32E.

R.33E.

RIVER

SNAKE

CEDED LAND

COUNTY LINE

CARIBOU NATL. FOR. POWER BANNOCK

POLE

48186 O - 60 - pt. 4 (Face p. 626)

R.35E. R.36E. R.37E. R.38E.

T.2S. T.3S. T.4S. T.5S. T.6S

Blackfoot River

Blackfoot

Gibson Ranch

Gibson Flat Canal

Stevens Peak

Lincoln Pk.

Trail Creek

Lincoln Creek

Trail

Line

County Line

Bannock

North Putnam

South Putnam

Ranger Station

Ranch

CARIBOU NATIONAL FOREST

Port Neuf Reservoir

DEPARTMENT OF THE INTERIOR
OFFICE OF INDIAN AFFAIRS
FORT HALL INDIAN RESERVATION
IDAHO
1945

Scale of Miles

LEGEND

- Hardsurfaced roads
- Graded roads
- Graveled roads
- Unimproved roads
- Railroads
- Telephone lines
- Permanent streams
- Seasonal streams
- Springs
- Springs Improved
- Lakes and reservoirs
- Wells with windmills
- Wells with windmills and trough
- Wells

——— Range Unit Boundary

5 Range Unit Number

(3) Range Unit used by Indians

Compiled and drawn from aerial photographs, GLO plats and other data. The water level shown for the American Falls reservoir is the mean high water level.

E.H.Coulson,
Chief Engineering Draftsman
Division of Forestry and Grazing.

9/29/55 JCM

times difficult to locate adequate sources of water underground and there are no major streams immediately available to these communities.

There is one other area which I would like to point out and this is in the Snake River, north of the Snake River in the underground water supply that was discussed quite extensively in the discussion on water resources which is in the lava beds that receive the runoff from the rivers and fallout in that area, or, I am sorry, rainout in the area.

These are used as a source of water for a large number of people in that area and from some of our major centers of population, including the city of Idaho Falls and the same type of source applies to cities such as Jerome, Gooding, and Shoshone. One of the reasons I would like to mention this is that this seems to be from our observation an almost inexhaustible source of groundwater and the water is of excellent chemical quality.

There is one difficulty that I would like to mention involving this water which is that it is not protected by a filtering mechanism and the geology above this formation and the underground structure consists largely of coarse lava containing many fissures and channels. These, unfortunately, have been utilized for the disposal of waste and sewage and in some cases irrigation water. These lead to a contamination and pollution of these underground waters, and if this practice is not curtailed we will have a loss of a great resource as well as forcing some of the cities to seek other water supplies.

I mention that because it is a somewhat unique situation and one which I personally feel is a problem that we should recognize and correct before we have done further damage to this valuable resource.

I would like to say that in all of our major surface waters we have communities dependent on these streams for their domestic water and of course the degree of treatment required to produce a suitable water is dependent upon the quality of the stream as it reaches the community.

Senator YOUNG. Do you mind if I interrupt you at that point?

Mr. ANDERSON. Yes?

Senator YOUNG. Don't you have a good ground water supply here, too, along with the stream?

Mr. ANDERSON. We will mention that, yes. In most of our areas there have been so far adequate ground water to supply the domestic needs. That is true here in the city of Boise. There are areas, however, where because of the peculiar geological formations the ground water is not available, that is, the material is such that it does not yield water. Therefore, surface water is required. I am going to mention that Weiser is one of these locations and Twin Falls is another in which suitable ground water has not yet been located. At least the explorations have not yielded a good quality water. Therefore, the surface waters have been used.

Because of the fact that these waters are all used to some extent for domestic use we are concerned, of course, with the quality and because of the relatively large flows in these streams and we have as yet not highly developed areas, the problems have not become acute as far as pollution in the major streams. They are, however, increasing and we do have some of the smaller streams in which pollution has become acute.

Changes in our way of life sometimes affect these things. New problems that we did not have a few years ago, I would like to mention one of them is the widespread use of detergents instead of soap. These detergents are not amenable to the usual sewage treatment and they are returned back to the water and eventually build up and cause problems of forming and in some cases have built up to the point where they produce a taste and are toxic to fish. These are some of the problems of water pollution that I use as an example that did not exist before the use of this material. These types of things are with us all the time. The use of new insecticides in large quantities eventually find their way into the streams and produce detrimental effects.

One other point that I would like to mention again that we have noted in our activities with stream pollution and its relation to domestic water is the problem of maintaining flows far below some of the projects for the dilution of treated sewage and treated industrial waste.

I think this has been overlooked or left out of some of these developments and it works to the detriment of any municipality or industry that is trying to operate and maintain a degree of treatment that can be acceptable to the receiving streams.

Most every activity that has been mentioned here today in some way affects the quality of the water and water quality is certainly important to each and every one of these activities that have been mentioned. And preserving the quality of water for these various uses appears to us to be just as important as having the water in the first place or reserving the right to use it

That will conclude my remarks. The more detailed writeups on the various areas have been included in the paper.

Senator DWORSHAK. Mr. Anderson, have you in the department of public health had any problems arising from the operation of the national reactor testing station near Arco, Idaho?

Mr. ANDERSON. We have in principle taken the position that no waste should be discharged directly to these underground waters, since we feel that this could contribute to the loss of a great resource in our State. This is one of the things which it is my understanding that they are in some cases doing.

Senator DWORSHAK. I know that the Atomic Energy Commission is vitally interested in handling the disposal of waste materials and in utilizing water without jeopardizing in any way the welfare and health of our people in Idaho. Do you feel that there has been full cooperation and that every precaution is being taken to avoid any adverse reaction?

Mr. ANDERSON. Sir, I would like to make answer to that question.

The CHAIRMAN. A little louder, please.

Mr. ANDERSON. I would like to answer that question as a personal observation since I do not have a statement to that effect prepared from the department.

I feel that their operation there, while I do not feel that they have at the present time done any damage to the underground water, I feel that the method that they are using could, under circumstances, lead to a real problem there.

Senator DWORSHAK. I know that considerable money is being expended to perfect the most effective disposal of waste materials. Does

the department of public health watch these developments? Don't you feel responsible to some extent for safeguarding the health of the people in that section of our State? Or are you content to rely entirely upon the planning of the Atomic Energy Commission?

Mr. ANDERSON. I would say no, that they feel a responsibility there; yes, sir. This question of responsibility has—they also feel that they have—this is my opinion again—feel that they have the total responsibility of that so there is perhaps a conflict of opinion in that matter. But I feel that their operations there are not of the same precautions taken that may be taken in other areas where they are using the underground disposal methods.

Senator DWORSHAK. When you say other areas, to what do you refer?

Mr. ANDERSON. I am referring to descriptions I have heard of their method of disposal at Hanford, which I feel would be more satisfactory.

Senator DWORSHAK. Does that complete your statement?

Mr. ANDERSON. Yes, sir.

Senator DWORSHAK. Thank you.

(The prepared statement follows:)

STATEMENT OF VAUGHN ANDERSON, CHIEF, ENGINEERING AND SANITATION SECTION, IDAHO DEPARTMENT OF HEALTH

The Idaho Department of Health has records of approximately 280 public water supply systems which serve an estimated 370,000 persons within the State. Of these, there are 244 supplies, each of which serve communities of 100 or more persons. Sources of these supplies include streams, lakes, springs, and wells. For the most part, Idaho communities are not faced with major difficulties in obtaining adequate quantities of domestic water and in most cases, water supplies are of excellent quality. It is becoming apparent, however, that difficulties are arising in some areas in maintaining and developing sources of water of adequate quantity and high quality to meet the needs for increased water usage, and expanding population and industrial development.

The following are typical examples of water supply descriptions and problems for a number of Idaho communities:

BONNERS FERRY AND SANDPOINT

These cities originally obtained their entire supply from small streams originating in the heavily forested mountainous areas adjacent to the communities. As the supplies were originally developed, they were of excellent chemical and physical quality and required no treatment except chlorination. Logging and roadbuilding activities in the watersheds serving as a source for these supplies have deteriorated the physical quality of the water to such an extent that complete filtration plants have been necessary. In addition, both cities have been forced to supplement their watershed source with additional water obtained from the Kootenai River and Lake Ponderay. Protection of these sources from pollution will be necessary to preserve the present good chemical quality.

COEUR D'ALENE

The city of Coeur d'Alene obtains domestic water principally from Lake Coeur d'Alene. Some steps have been taken to supplement lake water with water from deep wells in the vicinity and indications are that underground sources are adequate in quality and quantity to serve as a major supplement to the city supply. A marked increase in the use of Lake Coeur d'Alene for recreational purposes has increased pollution of the lake water to the extent that any additional increase may make it necessary to provide complete filtration in addition to chlorination.

MOSCOW AND GENESEE

There are no major streams in this area and it has been necessary for these communities to rely on ground water for the domestic supply. The ground water table in the vicinity of Moscow has been steadily lowering for a number of years. In addition to this apparent dwindling of the source of supply, the water has developed indications of quality deterioration due to an increase in the mineral content. The city of Moscow is carrying out a program to determine its possible future course in developing additional sources of water.

KELLOGG AND ST. MARIES

These cities obtain their water from forested mountain watersheds. The city of St. Maries has an excellent source of water in Rochat Creek. The quantity of water available is definitely limited and any major expansion would require additional water sources. Water would be available from the St. Joe or St. Maries River; however, complete treatment would be necessary.

Water supplies for the Wallace-Kellogg areas are obtained from a number of small streams. Roadbuilding and other actvilties in the watersheds have caused water quality deterioration. Present sources are definitely limited in quantity and there is little evidence of ground water in these areas. Major expansion of these supplies would require development of additional sources.

CRAIGMONT, COTTONWOOD AND GRANGEVILLE

These communities are experiencing considerable difficulties in developing sources of satisfactory ground water. Surface water is not available. Because of the geological formation, ground water is difficult to obtain. Extensive geological studies would be necessary to determine possibility of the future development of water supplies.

BOISE AND PAYETTE RIVER VALLEYS

For the most part, communities in this area have been able to economically develop ground water sources which are adequate in quantity and, in general, of good quality. Indications are that withdrawal of ground water in most of these areas could be greatly expanded without seriously depleting the aquifers. In addition, surface supplies of good quality are available.

SNAKE RIVER—(NORTH SIDE)

The extensive lava flows which make up the Snake River Plains north of the river and which extend from the drainage areas to the headwaters of the Snake River form an unusually bad underground water storage basin. In general, these lava formations are very porous and contain extensive voids. Water, after passing through the topsoil, readily penetrates this formation and for that reason there is very little surface runoff from this entire area. Although this water is not confined, it is, in general, readily available at reasonable depths and yields from wells in this formation are very high with little evidence of drawdown or water table lowering. Water thus obtained is of good chemical quality, but because of the lack of filtering action, water is naturally subject to surface contamination. One major problem in connection with this source of water has been developed through the use of wells drilled into this lava formation for the disposal of sewage and industrial waste and waste irrigation water, resulting in direct pollution of the underground waters. Deterioration of water quality, particularly in the more heavily populated areas such as Idaho Falls, has been noted. This extremely large underground reservoir should be considered as one of Idaho's major assets. Pollution of this type must be eliminated if this resource is to be preserved. Cities obtaining their supply from this source include Ashton, St. Anthony, Idaho Falls, Rupert, Gooding, Jerome, Wendell, and Shoshone.

POCATELLO AND BLACKFOOT

The city of Pocatello obtains part of its water from mountain streams and the remainder from a series of deep wells. These sources appear to be adequate for present and immediate future needs; however, the city has anticipated that an additional source may be necessary in the future and has taken steps to acquired stored water from Palisades Reservoir.

The city of Blackfoot obtains its water from deep wells. The quantity and quality have been adequate for present needs. Surface water would be available if necessary for major expansion.

TWIN FALLS AND WEISER

An adequate supply of suitable ground water has not been so far obtainable in the Twin Falls and Weiser areas and the cities have relied upon water diverted from the Snake River. Because the river is subject to many sources of pollution, elaborate treatment is required to obtain a finished water of acceptable quality.

BEAR RIVER BASIN AREA

Major sources of water for communities in this area are large springs rising from the adjacent mountains. The cities of Preston and Soda Springs obtain their water supply entirely from such springs. Cities of Malad and Montpelier supplement their spring sources by the use of wells. It would appear that major expansion of water supplies in this area would require exploration for ground water sources or the provision of treatment for river water.

GENERAL COMMENTS

Most populated areas of the State, at present, have adequate sources of domestic water to provide for present needs and, in most areas, sufficient water of good quality could be economically provided for major population or industrial expansion. These resources are not unlimited and conservation and protection of available sources is becoming increasingly important if critical future problems are to be avoided.

It may be of interest to note that there are a large number of hot springs and wells within the State, a few of which have been utilized for economic purposes such as heating swimming pools, buildings or as a source of domestic hot water. The city of Boise is served by a hot water system that is utilized principally for heating of homes and commercial buildings.

POLLUTION AND HEALTH

Generally speaking, the surface water of the State are not subject to a high degree of pollution at present. There are, however, approximately 40 communities in the State which discharge raw sewage to the streams with no treatment whatever. Approximately this same number of communities have inadequate treatment facilities. It is apparent that discharge of untreated sewage to the State's waters presents a health hazard to persons utilizing this contaminated water for drinking purposes or irrigation, swimming, boating, etc. In addition, there are a few lesser streams in the State that are subject to a high degree of industrial and domestic pollution. The board of health has recognized these problems and is actively engaged in a program of pollution control and abatement. In addition to the surface water pollution, we are faced with the health hazard and water quality deterioration problems involved in the discharge of liquid-borne wastes to underground waters as previously described.

Senator DWORSHAK. I think our next witness would be Asher B. Wilson of Twin Falls, but I understood the chairman to say a few minutes ago that he wanted to be present when you made your statement.

Mr. WILSON. I better wait for him.

Senator DWORSHAK. Would you prefer to wait?

Mr. WILSON. That is the smart thing to do.

Senator DWORSHAK. He will be back at 1:14 if you prefer to wait or proceed now.

Mr. WILSON. I don't care. I can sit here.

Senator DWORSHAK. Is State Senator Bob Wetherell of Elmore County present?

Is mayor John Glasby of Mountain Home present? He requested permission to make a statement.

Mr. WILSON. John was here but he probably got hungry.

Senator DWORSHAK. Of course I know that these witnesses were listed as appearing following the luncheon recess at 1 p.m. Possibly they are not planning to be here until that time.

Is Don Fredericksen here representing the soil conservation district?

John T. Pool, representing the Flood Control District No. 1 (Heise-Roberts)?

Is there a representative of the League of Women Voters of Idaho present?

STATEMENT OF MRS. JOHN V. WALKER, PRESIDENT, STATE OF IDAHO LEAGUE OF WOMEN VOTERS

Mrs. WALKER. Senator Dworshak, Senator Young, and members of the Senate select committee, the League of Women Voters of Idaho, although not qualified to contribute information of a technical nature, wishes to take this opportunity to assure the Senate Select Committee on National Water Resources of its interest in the subject under consideration.

Our seven local leagues have long ago become acquainted with a variety of water problems on the local level. Six of the seven have studied local water pollution problems. Largely as a result of league action sewage treatment plants are operating or are under construction in the following municipalities: Boise, Caldwell, Idaho Falls, Lewiston, Moscow. The Moscow league has also been instrumental in promoting a program for an adequate municipal water supply, and the Idaho Falls league, in the study of fluoridation.

We are also, as you know, reaching the conclusion of a 4-year study of national water resources. Midway in this study, at the time of our 1958 national convention, leagues throughout the United States found themselves in agreement that national water policies should promote: coordinated administration, equitable financing, and regional or river basin planning. We are now engaged in a process of deciding on more explicit criteria.

To develop understanding of multiple national water problems, leagues in several areas of the United States are making studies of various river basins. You have already learned of the joint information-gathering efforts of the four State leagues in the Columbia Basin—Montana, Oregon, Washington, and Idaho. Through further study, and through distribution of our recently published booklet, "The Great River of the West," we hope to contribute toward fair and intelligent water decisions for the Pacific Northwest and for the Nation.

We hope at the same time to promote a greater appreciation for the water needs and problems of Idaho. From watershort Moscow, where it has been necessary to drill down over 900 feet to get additional domestic water, to some parts of southern Idaho, where a rising water table sometimes presents difficulties, Idaho's water problems are varied, and often interrelated. Flood control is of concern in a number of areas, particularly along the Kootenai River in northern Idaho near Bonner's Ferry, along the lower St. Joe, the lower Clearwater, and in southern Idaho along the Snake, Boise, and Weiser Rivers.

Three recent flash floods and the currently sandbagged streets of the eastern section of our capital city, Boise, dramatize the need for both short-range and long-range water-control measures. There is increasing realization throughout the State of the importance of good farming, grazing, logging, and fire prevention practices in maintaining desirable watershed conditions.

There are in Idaho, as elsewhere, frequent conflicts of interest. The conflict of advocates of fish and wildlife preserves and advocates of multipurpose dams, particularly on the Salmon and Clearwater Rivers in central Idaho, is an example. The fish versus dams controversy in its interstate aspect probably points up as clearly as any other current intrabasin argument the necessity of achieving cooperation with our downstream neighbors, Oregon and Washington.

We also wish to emphasize the part water must continue to play in our State's economic development. Irrigation in southern Idaho and forestry in northern Idaho are of paramount importance, and will continue to be. As industry develops further to process the products of field and forest and to broaden the State's economy, and as population grows, there will be increasing demands for water. Proper multiple use of water, both public and private, will require careful organization and planning by all agencies involved, both governmental and nongovernmental.

Although the State of Idaho lies most completely of all the four Pacific Northwest States within the Columbia Basin, there is sometimes the feeling that in regional water development it is at a disadvantage with its western neighbors, particularly as their populations (especially that of Oregon) are chiefly west of the Cascade Mountains in an area of relatively abundant rainfall. With its thin population (650,000 people in the 14th largest State), with nearly 65 percent of its area in the public domain, with such a large part of its territory naturally arid, and with the obvious need for development, Idaho's concern about water is easy to understand.

As a nonpartisan organization devoted to the promotion of political responsibility through informed and active citizenship we wish to commend the work of the Senate select committee. We look forward to the publication of its findings as an important future source of information.

Thank you for the privilege of appearing here today.

Senator DWORSHAK. This is an excellent statement. I think you ought to identify yourself for the record. You did not mention your name and the capacity in which you were representing the League of Women Voters.

Mrs. WALKER. I am Mrs. John V. Walker, State president.

Senator YOUNG. I, too, wish to commend you for your statement. I think it is very fine that the National Women's League of Voters is taking this interest in water resources all over the United States. We had some very excellent witnesses from the League of Women Voters in Bismarck, N. Dak., Laramie, Wyo., and Billings, Mont. I did not go to Missoula, but we had good witnesses from your organization every place.

Mrs. WALKER. Thank you.

Mr. WETHERELL. We have a Mountain Home representative, Senator.

Senator DWORSHAK. How is that?

Mr. WETHERELL. We have a Mountain Home representative.

Senator DWORSHAK. I asked a few minutes ago. We will be glad to hear from State Senator Wetherell from Elmore County at this time.

STATEMENT OF R. M. WETHERELL, STATE SENATOR, ELMORE COUNTY

Mr. WETHERELL. Thank you, Senator.

Senator Young and Senator Dworshak, my name is R. M. Wetherell. I am State senator from Elmore County, Idaho, and a lifelong resident of Mountain Home, its county seat. Center of the long-awaited Mountain Home project and home of the famous 9th Bombardment Wing of the Strategic Air Command.

In making this statement I would first like to express my own appreciation and, in addition, the appreciation of all in my area who are interested in the future growth of the State of Idaho for the consideration you distinguished members of this Select Committee on Water Resources have shown in making this meeting in Idaho possible. To Senator Frank Church and Senator Dworshak I also wish to extend my thanks for the part they have played in making this meeting a reality.

You have now heard some 3 or 4 hours of technical testimony giving detailed data on the water development potential of the State of Idaho. I will hope to make my statement in a manner which I trust will tend to correlate this testimony with the thinking of the majority of those people of this State who are aware that the State of Idaho need not remain a debtor State forever.

I am not representing those who would exploit the resources of our State for only personal pecuniary gain nor do I represent those farmers who appear to be content to sit on their headgates with pencil in hand in an endeavor to determine whether it would be more profitable to produce or more profitable to let their lands lie idle and collect soil-bank payments.

I am representing not only the residents of my own county who are vitally interested in the development of the Mountain Home and Crystal Springs projects in my county, but also those people in this State who have come to the realization that water, once a natural resource, is rapidly becoming a commodity—those people who realize that this country, which consumed a total of 40 billions of gallons of water each day in 1900, is now using over 278 billions of gallons each day and that the best estimates available place this figure at 600 billions of gallons per day by the year 1980.

The States of Oklahoma and Texas are considered wealthy States because of their abundance of crude oil and gas deposits. By the same token Idaho could be considered a wealthy State because of its vast supplies of water if it were only possible to avail ourselves of the complete utilization of this water. Water, as a commodity, has far more uses than does the natural deposits of oil, gas, or coal.

Once used these latter substances are lost forever. Through multipurpose developments, however, water may be used over and over again with very little loss. I feel that if the people of the 17 reclamation States would begin to think of water as a commodity the multipurpose uses of water could become a reality and we would refrain from continual fighting among ourselves over this precious product of nature.

In Idaho our State constitution recognizes four main uses of water. The first, of course, is human consumption. The second and third is agriculture or mining, the priority of which depends upon the terrain and character of the soil. The fourth is waterpower for the production of manufactured goods or other uses by direct means or through the generation of electricity.

We have an abundance of electric power. At least a 15-year supply is assured because of the control of the Snake River by the Idaho Power Co. Mining, for all practical purposes, is an activity of the past so there is only one remaining use for water in Idaho and that is for reclamation and irrigation.

In the latest issue of Changing Times, the Kiplinger magazine, there is an article which reveals that the Department of Agriculture has approximately 9 billions of dollars invested in surplus agricultural products in both loans and inventories. These farm surpluses have always been a factor which have prevented those in the East and Middle West from becoming very enthusiastic about reclamation of more lands.

Of this 9 billions of dollars, 88 percent is invested in tobacco, wheat, corn, and cotton.

I wish to impress upon you the undeniable fact that there is no tobacco grown in any reclamation State. Only the Egyptian type of cotton is grown in the reclamation States and right now we are importing this type of cotton. For all practical purposes the corn grown on reclamation projects is consumed by the livestock industries adjacent to these projects. Mainly the type of wheat which is grown on reclamation projects is high Durum content wheat, which is in great demand and is also being imported. With these facts in mind and in addition to these facts the fact that 80 percent of all the fruit and vegetables for year-round consumption is grown in the 17 reclamation States I hardly feel that you can justify any argument that we of the reclamation States are undermining the economy because of our contributions to the farm surplus.

We are sinners in one respect, however. We do produce most of the seed which is used in those States who do produce surplus agritural products, but we have the type of operation which lends itself to change. If we are required to cease production of seed we'll go into another row crop which might well be more profitable.

A great many, although their numbers are decreasing, believe that a reclamation project is just another expense to be borne by the taxpayers. Those who believe this know nothing of the investment potential of reclamation. There was never a reclamation project built which has not paid or is not paying for itself tenfold—first through direct repayment and later through the real property taxes, income taxes, and the many other taxes too numerous to mention.

Idaho is one of the few States which, during the past 10 or 12 years, has received but very little consideration in the field of reclamation. Yet each year over 50 million acre-feet of water goes unused within its borders and 35 million acre-feet of this water is produced wholly within the State of Idaho from the snowfall in our mountains.

This stalemate could be charged directly upon the shoulders of the Bureau of Reclamation for not promoting reclamation—the dearth of Federal funds could be due to a provision in the Idaho Power Co. license with the Federal Power Commission which states, in effect:

> Should the project works be damaged or the power output be reduced through any upstream diversion of the waters of the Snake River by the United States in conjunction with its conservation or reclamation program, then the United States shall have two options. They may pay damages for the loss or purchase the works at a value as may be determined by law.

This latter provision does not worry me as far as water supplies are concerned, as they are adequate. The matter which worries me is the fact that a company which has been such a bulwark in past years in defending and promoting the State of Idaho would suddenly turn to this type of provision which certainly gives them prior rights on the Snake River.

Our own congressional delegation could very well be blamed because of their apathy for reclamation and the undeniable fact that they have been outsold, so to speak, by Utah, Colorado, and California. The Fish and Wildlife Service are continually placing barriers in the way of reclamation dams because of the migratory fish which are barred passage upstream. At the Brownlee Dam on the Snake River the Idaho Power Co. has speen millions of dollars in an all-out endeavor to pass some 15,000 salmon upstream. The system which they use, however, has no control over the multitudes of trash fish. Consequently, trash fish and salmon at some 200 to 1 are transported upstream. The benefits of this strange operation are questionable.

These are only a few of the stumbling blocks which has prevented the development of reclamation in Idaho and other reclamation States.

You gentlemen who are members of this select subcommittee are in a position to evaluate these matters. You are in a position of trust and your recommendations will not be taken lightly. You hold the key to the full utilization of the water of this country and I am certain that your recommendations will result in a more orderly development of these water resources.

Thank you very much, Senator Young and Senator Dworshak.

Senator YOUNG. I would like to ask a question or two.

You say only durum wheat is produced on reclamation projects.

Mr. WETHERELL. What?

Senator YOUNG. You say only durum wheat is produced?

Mr. WETHERELL. Durum. That is a hard wheat, a very hard wheat.

Senator YOUNG. I know. Some of it is produced in North Dakota. On what reclamation projects is durum wheat produced?

Mr. WETHERELL. In Idaho there is a lot of durum wheat produced on reclamation projects.

Senator YOUNG. Is there any other type of wheat produced in Idaho?

Mr. WETHERELL. Any other type of wheat is consumed right here for chicken feed and other——

Senator YOUNG. I never heard of durum wheat being produced in Idaho.

Mr. WETHERELL. The only thing I can do is refer you to the speech that Governor Clyde, of Utah, gave before the National Reclamation Association where he stated, and he had the Department of Agriculture figures, to the effect that only durum wheat was raised on reclamation projects.

Senator YOUNG. I think if you check the facts you will find that that speech of his was almost totally incorrect. I don't think a bushel of durum wheat is produced on reclamation projects in Idaho. There is only one reclamation project in the United States where durum wheat is produced and that is the Tule Lake area of California. Also, the cotton produced in the reclamation projects—and I am for cotton—is largely cotton that is in competition with Southern States.

Mr. WETHERELL. I have not mentioned, of course, the alfalfa, the different crops we do grow. But the thing I want to impress upon you, Senator Young, is the fact we do not contribute greatly to the agriculture surplus.

Senator YOUNG. I don't think you do.

Mr. WETHERELL. Thank you.

Senator DWORSHAK. Senator, you make the statement:

> Idaho is one of the few States which during the past 10 or 12 years has received but very little consideration in the field of reclamation.

What would you suggest be done to alter that situation?

Mr. WETHERELL. I would suggest this, that while a great deal has been done in that respect and we do have the project in eastern Idaho going on at the present time, at the same time, as you see from the map that you have here, there is a great area of undeveloped reclamation lands. There is only one way that these can be developed and that is through the expenditure of Federal funds and the only place Federal funds come from is Washington and you are in the driver's seats when it comes to getting Federal funds, Senator.

Senator DWORSHAK. Of course, you understand, that we as Members of Congress don't merely appear before the Appropriations Committee or before the Bureau of the Budget and request that appropriations be made for some mythical project, that, in fact, before you can get any approval by committees, or appropriation of funds by Congress you have to have a specific project which has been recommended by some agency or the feasibility of which has been proved to such an extent that Congress will make the essential appropriations for development of that project.

Now, I have been serving for several years as a member of the Interior Committee and the Appropriations Subcommittees which handle the Department of Interior and Bureau of Reclamation budgets, the Army Engineering Corps budgets for civil works. I have complained that in Idaho there is a complete lack of unity and coordination which are essential to make possible the full utilization of our vast water resources. I think that if there be any indictment it should rest upon all of us who reside in Idaho, because we have not seen fit to have that full coordination without which we cannot make any successful presentations of projects before the Congress of the United States.

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Mr. WETHERELL. I feel that that is perfectly true, Senator Dworshak. The thing I cannot understand is why at the present time the Upper Colorado River Basin project is being built, at a cost of approximately $1,750 an acre. We have a project right adjoining Ada County that costs $600 an acre. It lies idle. The Upper Colorado River Basin is being built. The same thing is true of the Trinity River project in California. I know the downstream water users on the Trinity River were mad as hornets but the project is being built.

Senator DWORSHAK. Of course in all those cases that development has been recommended by the Bureau of Reclamation and by the Corps of Army Engineers.

Mr. WETHERELL. That is true.

Senator DWORSHAK. Until such recommendations of specific projects are made in the case of Idaho, we cannot hope to make much progress.

Mr. WETHERELL. That is right, without their cooperation. That is true.

Senator YOUNG. I would like to say for the record that all of Idaho's delegations in Washington have been very diligent in trying to secure these projects for the State. Senator Dworshak pointed out that you have to have local sponsorship and support all the way through. You first have to investigate and then if the project has a benefit-cost ratio of 1–1 or better you have a chance of getting appropriations for it. But every State in the Union, I suppose, has been waiting for projects for years. I think every Member of Congress would like to say that he was able to secure all of the projects that his constituents wanted. But I doubt if there is one in Congress that can say that.

Mr. WETHERELL. That is the reason I brought out, Senator Young, the fact that if we could consider water more of a commodity than we do a national resource it might give a different light on the subject and we could get together. I mentioned that right in my report, sir. I feel that you are entirely right when you say that Idaho has been devoid of any organization which will promote reclamation. That is true.

Reclamation has more or less sprung up as it happened. That is the way it has done. Of course, originally, when the Snake River could be dammed up and the water just flowed out on the plains, that was fine. Now when we get into these costly projects we have to have cooperation. I know I have heard of some of the testimony this morning which contradicted mine absolutely. There we are again at another stalemate. How to correct this is beyond my ken. That is up to you gentlemen. You are the Select Committee on Water Resources.

Senator YOUNG. I am afraid we are.

Senator DWORSHAK. Is Mayor John Glasby, of Mountain Home, present?

Is John Brandt, of Nampa Chamber of Commerce, present?

VOICE. Senator Dworshak, he is here. If he is over at the hotel I will go over and get him.

Senator DWORSHAK. Is John Brandt here, representing the Nampa Chamber of Commerce?

Is John T. Poole here, representing flood control district No. 1 in eastern Idaho? Will you proceed?

STATEMENT OF JOHN T. POOLE, FLOOD CONTROL DISTRICT NO. 1, IDAHO, HEISE-ROBERT SECTION

Mr. POOLE. My name is John T. Poole and I am representing flood control district No. 1, of Idaho, the Heise-Roberts section.

We have an extensive report here which I will not take the time to read. But I have a summary of the points that we have brought out which I will read and I would also like to bring out a point or two here in this summary as far as the benefits of this honorable committee.

The summary of points that we have brought out is:

(1) Water resource activities in the United States transcends individuals, or groups of individuals, private or public, and the States, and the national interest dictates that development of water resources be in accord with a comprehensive plan of development if maximum utilization is to be effected.

(2) Population trends, agricultural needs and industrial needs will tax the water resources of this area even under the most careful and comprehensive planning.

(3) We need all the water development possible to be limited only by the amount of water available.

(4) The need for water development is now. To defer it is to detract from the ultimate realization of the greatest benefit under maximum utilization under comprehensive planning.

(5) Since planning in the Snake River Basin is now almost an accomplished fact, the need for water activities in accord with a comprehensive plan can immediately go forward. Present studies indicate that maximum utilization of all of the waters of the Snake River Basin can be effected by present or anticipated populations, agricultural and industrial development in the immediate area.

(6) The pattern of water development should be predicated upon the good and necessity of the people, and therefore must transcend pure profitmaking.

(7) We must reevaluate "economic justification" since the question ultimately facing us is "Where can we obtain water at any cost?"

(8) It is for the Congress of the United States and the executive branch of the United States to say whether water development shall be public or private but we must have a comprehensive plan for this development, and future development, whether private or public, must conform to this plan if we are to realize the full potentialities of the Snake River Basin.

And in this questionnaire that we received I would like to enlarge upon for just a moment one or two questions that you point out, and I will go to question No. 4.

Answers to specific questions relating to the water resource activities between now and the year 1980 and projected to the year 2000.

(*a*) How much water development is needed? We feel that we should look forward to the development of all water resources available. In other words, the history of more populated areas is, and has been that their needs have more often than not exceeded the amount of water resources available; and that anything short of maximum development of these resources will ultimately be less than that which is needed.

(*b*) When is it needed? Haphazard development of our water resources has more frequently than not resulted in our realizing much less than that which could have been realized had the the development been according to a plan. The fact that development to date has been accomplished by individuals and local interests by their hard work, their individual initiative, and without outside help, and without any particular comprehensive plan for the development, should neither detract from the necessity for giving the highest priority for the protection of these existing rights and values, nor should it, on the other hand, deter the development of a comprehensive plan for water resource activities now. To defer such a plan is to detract from the ultimate realization of the greatest benefit under the maximum development.

(*c*) Where is it needed? This committee can only speculate with respect to the Snake River Basin, which is the last large source of water resources undeveloped. The need for such plans and for the development of water was recognized by this committee and the Federal agencies with whom we have had the most contact, that is, the Corps of Engineers, U.S. Army, the Bureau of Reclamation, and the Geological Survey many years ago. The fact that a study was authorized in the year 1955 and that a report on this study should be forthcoming almost immediately is only indicative of the fact that such a study in the Snake River Basin was needed and that it has been made. This committee would not attempt to speculate with respect to water resources activities outside of the Snake River Basin; except, that it is the considered opinion of this committee, and of everyone with whom this committee has been acquainted or associated in the formulation of these plans and studies, that all of the waters of the Snake River Basin can and must be conserved for the adjoining and adjacent areas, and that the development of water resources will probably lag behind both population and their domestic needs and agriculture and industrial needs for both water and hydroelectric power.

(*d*) What should be the pattern of water and development? This committee can answer this question by pointing up what appears to be the present pattern of water development as illustrated by the Burns Creek Reservoir on the South Fork of the Snake River in Idaho. Here is a project which will make available for irrigation more than 100,000 acre-feet of water per year for irrigation, which will serve as reregulating reservoir for the Palisades Reservoir, and which appears economically feasible from every point of view. It appears to be a part of a well-formulated plan for the further development of water, and incident thereto it provides much needed hydroelectric power. The Congress of the United States and executive branches of the United States all have looked upon it with favor and have approved the same; yet opposition stemming only from private utilities, in this case the Utah Power & Light Co. and the Idaho Power Co., have succeeded in two consecutive sessions of the Congress in blocking the final passage of the act in the House of Representatives. It is the considered opinion of this committee that the pattern of water development should be predicated upon the good and necessity of all, namely, for the good of population's domestic needs and agricultural and industrial needs for water. If in the pattern of water development predicated upon these criteria, and as an incident

thereto, and in order to justify economically such a development, there is developed hydroelectric power which would be in competition to private industry, it is the opinion of this committee that the water development should be carried on regardless of the opposition to such water development by such private industry. Succinctly put, the national interest which in substance is the people's interest must transcend profit making in any plan or pattern of water development.

Honorable committee, we have only one copy of this original, but if the committee or any industry, private or otherwise, would like a copy of this, we will be glad to furnish them.

Any questions?

Senator DWORSHAK. We will place that statement in the record.

Mr. POOLE. What is that, Senator?

Senator DWORSHAK. I said we will place that statement in the record.

Mr. POOLE. Thank you.

(The prepared statement referred to follows:)

REPORT OF FLOOD CONTROL DISTRICT NO. 1 OF IDAHO

1. OBJECTIVE OF REPORT

The objective of this report will be to specifically answer questions propounded in the bulletin dated September 3, 1959, "Information Desired by the Senate Select Committee on National Water Resources at Field Hearings."

2. THE EXTENT TO WHICH WATER RESOURCES ACTIVITIES IN THE UNITED STATES ARE RELATED TO THE NATIONAL INTEREST

This committee feels that water resource activities in the United States transcend individuals, or groups of individuals, private or public, particularly private, and States, and that the national interest dictates that the development of water resources must be in accord with a plan of development to be made by some authorized Federal agency, probably the Corps of Engineers in cooperation with the Bureau of Reclamation and the Geological Survey. (See exhibit A, attached hereto.) Such a plan of the Snake River Basin has already been the subject of a study by these Federal agencies continuing since February 15, 1955, and much of the information contained in exhibit A which was merely the opinion of our committee should now be able to be evaluated upon the comprehensive study made in the interim by the same Federal agencies heretofore referred to and therefore save your committee much duplication in time and expense insofar as the Snake River Basin is concerned.

3. THE EXTENT AND CHARACTER OF WATER RESOURCES ACTIVITIES, BOTH GOVERNMENTAL AND NONGOVERNMENTAL, THAT CAN BE EXPECTED TO BE REQUIRED TO PROVIDE THE QUANTITY AND QUALITY OF WATER FOR USE BY THE POPULATION, AGRICULTURE, AND INDUSTRY BETWEEN THE PRESENT TIME AND 1980, ALONG WITH SUITABLE PROVISIONS FOR RELATED RECREATIONAL, FISH, AND WILDLIFE VALUES

We believe that based upon population trends projected into the future to the year 1980, together with the agriculture necessary to support said population trends and the industry which will naturally follow, with the development of all natural resources, as well as water resources, will tax the water resources of this area even under the most careful and comprehensive planning.

4. ANSWERS TO SPECIFIC QUESTIONS RELATING TO THE WATER RESOURCES ACTIVITIES BETWEEN NOW AND THE YEAR 1980 AND PROJECTED TO THE YEAR 2000

(*a*) *How much water development is needed?*

We feel that we should look forward to the development of all water resources available. In other words, the history of more populated areas is, and has been, that their needs have more often than not exceeded the amount of water resources available; and that anything short of maximum development of these resources will ultimately be less than that which is needed.

(b) When is it needed?

Haphazard development of our water resources has more frequently than not resulted in our realizing much less than that which could have been realized had the development been according to a plan. The fact that development to date has been accomplished by individuals and local interests by their hard work, their individual initiative, and without outside help, and without any particular comprehensive plan for the development, should neither detract from the necessity for giving the highest priority for the protection of these existing rights and values, nor should it, on the other hand, deter the development of a comprehensive plan for water resource activities now. To defer such a plan is to detract from the ultimate realization of the greatest benefit under the maximum development.

(c) Where is it needed?

This committee can only speculate with respect to the Snake River Basin, which is the last large source of water resources undeveloped. The need for such plans and for the development of water was recognized by this committee and the Federal agencies with whom we have had the most contact; that is, the Corps of Engineers, U.S. Army, the Bureau of Reclamation, and the Geological Survey many years ago. The fact that a study was authorized in the year 1955, and that a report on this study should be forthcoming almost immediately, is only indicative of the fact that such a study in the Snake River Basin was needed and that it has been made. This committee would not attempt to speculate with respect to water resources activities outside of the Snake River Basin, except that it is the considered opinion of this committee, and of everyone with whom this committee has been acquainted or associated in the formulation of these plans and studies, that all of the waters of the Snake River Basin can and must be conserved for the adjoining and adjacent areas, and that the development of water resources will probably lag behind both population and their domestic needs and agriculture and industrial needs for both water and hydroelectric power.

(d) What should be the pattern of water and development?

This committee can answer this question by pointing up what appears to be the present pattern of water development as illustrated by the Burns Creek Reservoir on the South Fork of the Snake River in Idaho. Here is a project which will make available for irrigation more than 100,000 acre-feet of water per year for irrigation, which will serve as a reregulating reservoir for the Palisades Reservoir, and which appears economically feasible from every point of view. It appears to be a part of a well-formulated plan for the further development of water, and incident thereto it provides much needed hydroelectric power. The Congress of the United States and executive branches of the United States have all looked upon it with favor and have approved the same; yet, opposition stemming only from private utilities, in this case the Utah Power & Light Co. and the Idaho Power Co., have succeeded in two consecutive sessions of the Congress in blocking the final passage of the act in the House of Representatives. It is the considered opinion of this committee that the pattern of water development should be predicated upon the good and necessity of all; namely, for the good of the population's domestic needs and agricultural and industrial needs for water. If in the pattern of water development predicated upon these criteria, and as an incident thereto, and in order to justify economically such a development, there is developed hydroelectric power which would be in competition to private industry, it is the opinion of this committee that the water development should be carried on regardless of the opposition to such water development by such private industry. Succinctly put, the national interest which in substance is the people's interest must transcend profitmaking in any plan or pattern of water development.

(e) What levels of costs and expenditures are justifiable for future water development?

We are cognizant of the fact that according to existing criteria of various governmental agencies, and in addition to the engineering feasibility of water projects, there is always the matter of "economic justification." In other words, prior to the approval of most dams or other water developments, the Bureau of Reclamation, the Corps of Engineers, or the Geological Survey must show that such projects are economically justified and that the repayment of expenditures by the United States can be made from revenues from the develop-

ment. We feel that the time is fast approaching when we must take a new look at what we consider levels of costs and expenditures which are "economically justifiable"; inasmuch as ultimately and most certainly before the year 2000 the question will not be: "What levels of costs and expenditures are justifiable for future water development?" but "Where can we obtain water at any cost?"

(*f*) *What amounts of water will be required in relation to various levels of population and economic activity, stated by time periods and geographic areas? What are the economic limits for water development in terms of cost per acre-foot that are economically justified for water for various uses? What have been the costs in the past for water for various uses, what are the present costs of water for various uses, and what is expected to be the future limit, if any, in the cost of developing water for various purposes? How much expenditure of public and private funds can be economically justified for water programs?*

This committee feels that answers to the foregoing questions would have to be predicated upon statistical data which this committee does not have access to, and that this committee would probably not be able to evaluate the data with any degree of clarity even if the data were available to us. We further feel that the answer to these questions could much better be given by the U.S. Corps of Engineers, the Bureau of Reclamation, and the Geological Survey, and that in all probability in the study heretofore referred to, which should now be completed by these agencies, the answers to these questions will be embodied. It is sufficient to say that whether the Congress of the United States and the executive branch of the United States decide that the expenditures for water programs should be "public" or "private," neither private or public water development should be permitted until such time as a comprehensive plan for water development is first undertaken by the U.S. Government and completed, and that future development, whether public or private, must conform to such a comprehensive plan after it has been completed.

EXHIBIT A

FLOOD CONTROL DISTRICT NO. 1 OF IDAHO,
Lorenzo, Idaho, February 15, 1955.

To: District Engineer, Corps of Engineers, U.S. Army, Walla Walla, Wash.
From: Flood Control District No. 1 of Idaho, Lorenzo, Idaho.
Subject: Report on modification of "Report of Chief of Engineers on Columbia River and Tributaries, Northwestern United States," submitted in House Document 531, 81st Congress, 2d session.

(1) OBJECTIVE OF REPORT

The primary objective of this report will be to approach the development of the water resources of the Snake River Basin from the flood control and navigation standpoints; however, in connection with this approach, it is recognized that the use of water for irrigation in this region has priority over its use for flood control, navigation or hydroelectric power. The Idaho Legislature expressly recognized this in the act creating flood control districts, when it said "* * * sound policy of flood control and prevention must necessarily contemplate the highest and best use of any stored or developed waters resulting from measures and methods of flood control and prevention."

(2) FLOOD CONTROL DISTRICT NO. 1 OF IDAHO—HEISE-ROBERTS

Throughout the years there had been some help from the United States of America, but it was not until the passage of the enabling act in 1937, now embodied in chapter 31, title 42, of the Idaho Code that there was any administrative body vested with authority to act as an intermediary between the Corps of Army Engineers of the United States and State and local interests.

Flood Control District No. 1 of Idaho was created in 1946. The primary purpose of the district is to assist the United States, and to obtain aid and assistance from the United States in flood prevention and control of the waters of Snake River. The district embraces lands adjoining and adjacent to the

river on both the right and left banks of the South Fork of the Snake River from Heise down to and beyond the confluence of the North and South Forks of the Snake River to Roberts, Idaho. There are approximately 44,160 acres of land within the district with a total assessed valuation of approximately $1,266,000.

Many persons labor under the misconception that Flood Control District No. 1 of Idaho was created solely for the benefit of the landowners adjoining the river and within the district, that is, to keep the river from wasting away and innundating these adjoining lands. While the works thus far constructed have resulted in obvious benefits to the adjoining landowners, less obvious, but equal benefits, have resulted to thousands of acres of other lands and landowners many miles distant from the district. From Anderson's Dam at Heise to the Idaho Canal diversion dam, the area in which the funds appropriated by the Congress of the United States, have been thus far expended there are 38 separate canals which divert water to irrigated lands either directly out of the Snake River or out of the great feeder canal, which diverts its water from the Snake River. During 1953 diversions from these 38 canals from May to September totaled 1,961,588 acre-feet of the waters of the Snake River, which irrigated 243,024 acres of highly fertile land. These lands are located in Madison, Jefferson, Bonneville and Bingham Counties, Idaho. (Appendix A, attached hereto lists these canals, their diversion and the acres irrigated.) These headings and the irrigation of these lands are directly dependent upon the measures and methods of flood control and prevention taken by the Corps of Army Engineers and Flood Control District No. 1 of Idaho. The municipality of Idaho Falls and all of its municipal hydroelectric power is dependent upon the maintenance of the present channel of Snake River within Flood Control District No. 1 of Idaho. Less directly, most other municipalities from Rexburg on the north, to Blackfoot on the south, are dependent upon the economy of the areas served by these diversions.

With the creation of Flood Control District No. 1 of Idaho in 1946, for the first time in the history of the Snake River in this area, there has been a continuing administrative body which has been able to keep data and make a continuous study of flood control problems for 8 continuous years. From these studies we have made certain observations.

(3) OBSERVATIONS OF FLOOD CONTROL DISTRICT NO. 1 OF IDAHO FROM STUDY

(*a*) All important floods in the Snake River Basin are caused by snowmelt at high altitudes, either with or without the influence of rainfall, and the principal flood damage areas of the upper basins are the mountain valleys into which the snowmelt floods debouch from mountain canyons.

(*b*) During every spring runoff Snake River might leave its established channel and form a new channel through Jackson Hole.

(*c*) The possibility of the Snake River establishing a new channel forms a definite threat along the South Fork of the Snake River within the boundaries of Flood Control District No. 1 of Idaho. This threat recurs and becomes aggravated with each succeeding year; although it has been lessened by the construction of extensive channelization and bank stabilization work by the Corps of Engineers within the district.

(*d*) Threats of diversions due to spring runoff exists on all of the tributaries of the Snake River in western Wyoming and eastern Idaho. These floodwaters not only threaten the lands adjacent to the tributaries, but once they have flowed into the Snake River they aggravate and contribute to the problem along the main Snake River.

(*e*) The threat of a flood disaster causes large areas to be retained as brush pasture instead of being transformed into land capable of producing row crops or irrigated pasture lands. There is no doubt that the upper valleys are not utilized to the maximum of their potential productive capacity due to the existence of the threat of flood damage.

(*f*) Since the creation of Flood Control District No. 1 of Idaho, in 1946, the Congress of the United States has appropriated, and spent, through the Corps of Army Engineers, well over $2 million on the stabilization of the channel of the Snake River in the Heise-Roberts area. According to the present plans contained in the report of the Chief of Engineers, submitted in House Document 531, 81st Congress, 2d session, the proposed recommendations contained therein would require the expenditure of the estimated additional $4 million to provide reasonable security in the Heise-Roberts area alone; and it is also estimated

that it will require approximately $40,000 per year to maintain such construction once it is completed.

(*g*) Palisades reservoir, now under construction, as a multiple purpose dam, does not provide adequate flood control capacity to meet the recurring emergency runoff years on the South Fork of the Snake River above the dam. Palisades dam has a capacity of 1,400,000 acre-feet of water, and a probable normal drawdown of 400,000 acre-feet. These figures may be contrasted with a waste runoff of 3,800,000 acre-feet in 1928 and 3,500,000 acre-feet in 1952.

(*h*) It appears that to provide even reasonable security to the development that is almost certain to occur in the eastern Idaho Snake River Valley in the near future will require that the protection that is now provided to a limited area, namely, within Flood Control District No. 1 of Idaho, be extended to the whole of the valley, viz, from Heise downstream on the South Fork to the confluence of the North and South Forks, from St. Anthony downstream on the North Fork to the confluence of the North and South Forks, and from the confluence downstream to the American Falls Reservoir. Such extensive works are not now provided for in House Document 531.

(*i*) The need for extensive channelization and bank stabilization exists on the main stream of the Snake River throughout the whole of western Wyoming.

(*j*) There is a need for channel stabilization and complete control of the flows of the streams in the mountain valleys of practically every tributary of the Snake River. The cost of this stabilization has not even been estimated.

(*k*) Channelization and bank stabilization within Flood Control District No. 1 of Idaho has no beneficial effects upon flood control problems existing in western Wyoming, or on any of the tributaries of the Snake River. Nor, would complete channelization and bank stabilization in western Wyoming and on the tributaries of the Snake River upstream from Flood Control District No. 1 of Idaho alleviate our flood control problems.

(*l*) Presuming that House Document 531 were modified to provide for channelization and bank stabilization of the Snake River and all of its tributaries necessary to reasonable security for the effected areas, and the Congress of the United States were to appropriate the necessary funds, such projects and development would do nothing to provide for the maximum utilization and development of the waste and flood waters except to provide them with a channel for their escort downstream.

4. SNAKE RIVER BASIN WATER RESOURCE PLAN OF DEVELOPMENT

As can be seen from the foregoing observations channelization and bank stabilization alone do nothing for the maximum development of the water resources of the Snake River Basin so that the basin itself will be benefited to a near maximum. We believe that by modifying House Document 531 by providing for storage projects for accomplishing flood control at locations as near the point where flood waters debouch from the mountains as topographic conditions and other influences will permit, will not only reduce the amount of channelization and stabilization required to near zero, but will also furnish additional water for irrigation when it is released at a nondamaging rate during the summer, and incident thereto, provide hydroelectric power, and will contribute the maximum benefits to the development of the Columbia River Basin as a whole.

In the inception any such plan for maximum development of the Snake River Basin as a whole should, and must, give the highest priority to the protection of existing rights and values. The development of the Snake River Basin to date has been accomplished by individuals and local interests by their hard work, their individual initiative and without outside help.

Because of unique climatic, topographic, and geographical factors, the Snake River Basin presents unusual opportunity for water resource development. Of the tens of millions of acres within the basin, perhaps half of the acres is at elevations and of topography that is adapted to cultivation; however, considerable of the area is not of the proper soil. It has been estimated that there is 8 million acres which is of excellent soil, which if supplied with moisture, could produce excellently of all crops adapted to a temperate climate. Approximately 2 million acres are now irrigated, leaving 6 million acres that are available for irrigation. It is probable that enough water for the irrigation of all of the cultivated areas now comes into the Snake River Basin were it possible for the water to be properly conserved and allocated. How much of the additional 6 million acres can be irrigated is subject to conjecture, which

can only be determined by future studies; but the possibilities stagger the imagination.

The topography of the areas to be irrigated in the Snake River Basin are favorably located as to elevation and relation to the source of water supply, if the water is primarily conserved through upstream storage and distributed with due consideration to maximum utilization of return flow. Practically all of the water that is used or is available for irrigation use in the Snake River Basin is originally conserved by nature in the form of snow at elevations above 7,000 feet. Such areas are situate in general, around the rim of the basin. Any plan for comprehensive development of the water resources of the Snake River Basin should provide for storage installations to be located as far upstream and as close to the lower edge of the snowpack as possible. Storage so placed would make possible the irrigation of the upstream valleys immediately below the snowpack, then irrigation of the vast intermediate areas comprising the Upper Snake River plain, then irrigation of the Bruneau, Mountain Home, and adjacent areas, and finally irrigation of the lower valleys of the Snake River and the valleys of the Boise, Payette, Weiser, and other streams entering Snake River near the western boundary of Idaho. Only through a plan of which the primary feature is upstream storage can the major portion of the irrigable area of the Snake River Basin be irrigated, and through no other plan can this be accomplished.

Such a plan presupposes that insofar as western Wyoming is concerned, the construction of upstream reservoirs in that area would make the utilization of such waters available to the high mountain valleys in Wyoming first. It is recognized that such use by Wyoming interests will be beneficial not only to them, but by maximum utilization of the return flow, will in turn be benefical to Idaho interests.

The waters that enter that portion of the Snake River Basin above Bliss, in the main, debouch from the snowpacked areas into mountian valleys, then either flow directly to the main channel of the Snake River or are conducted to Snake River in underground channels beneath the vast lava plain of central and eastern Idaho. That portion of the water which travels underground is lost to use in the upper valley areas and to a major extent in the entire Snake River Basin. Retention of this lost flow in reservoirs upstream from the plain areas would permit distribution of it on the surface of the plain, thus making possible irrigation of hundreds of thousands of acres that cannot be otherwise supplied with water, and after the first use of this water, sufficient return and other flow would still enter the ground and return to Snake River in the Thousand Springs area to eliminate any possibility of reduction of present use on the lava plains or downstream therefrom.

Approximately 6 million acre-feet of water now enters Snake River in or adjacent to the Thousand Springs area principally from underground flow. It would appear that at least half of this flow is water that escaped use in the upper valley areas because it percolated into the ground prior to storage or irrigation diversion. If a reasonable portion of this unused water were stored in reservoirs close to the snowpack, hundreds of thousands of additional acres could be irrigated in eastern and south-central Idaho.

A great amount of water is lost to use in eastern Idaho through percolation in the Rexburg-St. Anthony area. It would appear that the amount of water so lost in this area would be between 500,000 and 1 million acre-feet. Conservation of this water in upstream reservoirs and its use and possible reuse in eastern Idaho could contribute much to the development of this area.

Much of the flows of the streams flowing south from the mountains bordering the eastern portion of the Snake River Basin on the north is lost for irrigation use either because of underground percolation or because they now flow downstream prior to the time their waters are required for irrigation. Upstream storage on these streams would permit greater agricultural development of their valleys and in addition would provide irrigation water for other areas.

Major or large portions of the runoff from all of the streams entering Snake River west of Bliss are lost to beneficial use because the principal portion of the runoff occurs prior to the time water is needed for irrigation. Tremendous areas of land can be irrigated only if these lost waters are conserved in upstream reservoirs until they are needed for irrigation.

Probably 14 million acre-feet of water from snowpack areas enters Snake River and its tributaries in the Snake River Basin at elevations of 7,000 feet or above. The power potentialities that are provided by this water and its elevation above sea level are tremendous. The provision of upstream storage for

flood control through the Snake River Basin would automatically provide the basic means for production of power to many times the volume that is now possible of production by Snake River and its tributaries in the upper basin of the river. Storage of the water in the upstream reservoirs and its release during the irrigation season would automatically provide many times the power required for irrigation of areas from above gravity flow level.

Such reservoirs would, of course, provide ideal habitat for fish, game, and wildlife and would provide additional recreational areas.

All of the above statements pertaining to this water resource plan of development are based upon our opinion from studies made which are difficult of evaluation. If we could make these statements conclusively and their evaluation were possible, there would be no need for a study and report. We have tried, herein, to be conservative in our statements and of the benefits of such a contemplated program.

5. CONCLUSIONS OF FLOOD CONTROL DISTRICT NO. 1 OF IDAHO

From the foregoing we conclude that:

(*a*) Channelization and bank stabilization alone does not provide for maximum utilization and development of the water resources of the Snake River Basin.

(*b*) Upstream storage of waste and flood waters will not only provide for flood control but will make possible development of these water resources for irrigation and incident thereto power development.

(*c*) The cost of channelization and bank stabilization from Heise and St. Anthony downstream to the American Falls Reservoir alone will approach that of upstream storage which will provide for these additional benefits other than flood control.

(*d*) The economic benefits of such a program to the areas within the Snake River Basin would justify an expenditure of many times what the construction of the upstream storage facilities would cost.

(*e*) Haphazard development without a comprehensive and integrated plan will detract from the possibilities that would be realized under a comprehensive plan.

(*f*) If the realization of the potentialities for the development of the water resources of the Snake River Basin is to become a reality, development must be in accordance with a comprehensive plan. No such plan exists, and the need therefor is immediate and of great importance.

It is therefore respectfully submitted that the Report of the Chief of Engineers on Columbia River and Tributaries, Northwestern United States, Submitted in House Document No. 531, 81st Congress, 2d Session, be modified, so as to provide for a restudy of such document with a view to providing flood control for the Snake River by upstream storage as is hereinbefore outlined.

APPENDIX A

Canal	Diversions (acre-feet)	Acres irrigated	Canal	Diversions (acre-feet)	Acres irrigated
Riley	5,370	870	Reid	43,700	5,300
Progressive Irrigation District	217,000	31,655	Texas Feeder	78,000	9,000
Farmers Friend	94,000	10,950	Nelson Corey	2,160	430
Enterprise	41,000	5,000	Hill Pettinger	857	160
Nelson	343	53	Rigby	44,600	4,000
Mattson and Arnsberger	3,800	500	Dilts	6,850	800
Ross and Rand	1,030	130	Island	44,700	3,600
Butler Island	12,400	1,200	West Labelle-Long Island	137,000	10,500
Steele	1,610	220	Parks and Lewisville	95,700	7,000
Harrison	111,000	13,000	North Rigby	15,200	1,500
Cheney	1,450	180	White	918	160
Rudy Irrigation Co	51,300	5,500	Ellis	995	100
Kite and Nord	1,330	200	Bramwell	2,310	200
Burgess	220,000	22,000	Butte and Market Lake	80,700	20,000
Clark and Edwards	20,100	1,800	Osgood	30,800	6,550
Lowder Canal Co	11,600	1,100	Bear Island and Smith	765	200
East Labell	34,800	2,600	Idaho	260,000	35,936
Sunnydell	38,000	3,800	Kennedy	11,500	2,700
Lenroot	32,700	4,200	Great Western and Porter	206,000	29,930

Senator DWORSHAK. Is Mayor John Glasby of Mountain Home present?

STATEMENT OF JOHN D. GLASBY, PRESIDENT OF MOUNTAIN HOME CHAMBER OF COMMERCE

Mr. GLASBY. Senator Dworshak and Senator Young, I would like to correct that. I am president of the Mountain Home Chamber of Commerce.

I am here representing the Mountain Home interest in the Guffey project which we hope to irrigate in the Mountain Home desert.

The Guffey project has offered new hope to us who have long dreamed of seeing the Mountain Home desert irrigated.

The Mountain Home desert is the largest undeveloped reclamation project in the United States.

We are blessed with a mild climate, fertile soil, and abundant supply of water, but still our land is undeveloped. Yet other projects, with higher costs, longer repayment periods, less favorable climates, and poorer soil have repeatedly taken priority over the Mountain Home project.

Our failure in the past has been largely due to the failure of the people in southwest Idaho to agree on the method of development. Now with the Guffey project we have found a project that has wide agreement among a large majority of the interested people in southwest Idaho.

The Guffey project is not the total answer to the reclamation of all the Mountain Home project, but we feel that it is a substantial beginning, inasmuch as it will bring under irrigation the Long Tom Division, which amounts to approximately 100,000 acres of unreclaimed land.

The building of the Guffey Dam on the Snake River will furnish power to pump Snake River water into the Deer Flat Reservoir which will furnish water to be used in the lower part of the Boise project and in turn Anderson Ranch Dam water can be diverted to the Mountain Home desert.

This project is a must if Idaho is going to develop any of our arid lands. We cannot afford to pass over this project for if we do not start utilizing our valuable water resources someone else will. We cannot afford to let water that originates in our State continue to go to waste.

With a rapid expansion of our population and the continuing depletion of our agriculture lands due to housing projects and highway programs there is an ever-increasing need for new agriculture lands.

I will not go into detail on the Guffey project for the feasibility and the need for the Guffey project is outlined in detail in the report of the U.S. Bureau of Reclamation, with the wholehearted support of the vast majority of people in Southwestern Idaho. We feel that the authorization of this project cannot be delayed.

Senator DWORSHAK. Mr. Glasby, do you know of any opposition to this proposed project?

Mr. GLASBY. I didn't. I heard this morning that one farm group from Canyon County that appeared here had opposed it.

I would like to make a statement in that regard. Of course any new irrigation lands that come in will go in competition with already existing farmlands but I think if they thoroughly understood that this project will take some 10 to 15 years to develop and by that time with our increasing population and our need for agricultural products, I really don't feel that they have any fears.

Senator YOUNG. You certainly have almost unlimited water and land resources in that State. I would think that one day, and not in the too distant future you will realize a great development and a great increase in your population. About a year ago now I spent a day with the Secretary of Agriculture in Japan. There he told me if he kept on taking land out of production at the rate they are now, within 100 years they would not have an acre of land left for farming purposes. They become so conscious of land for agriculture purposes that agriculture people practically kill the rest of the people worrying when they can build a road. They don't even want them to build a road except up over the mountain. And they need a good many roads. But their real problem is food.

I suspect it will not be too many more years before we will have that same problem here. I may say to that I don't believe there is a nation in the world where the farmers produce more per acre than they do there. They have farm tools a foot long. They go down in the soil as far as they can and produce as much per acre as they can and still are far short of food.

Senator DWORSHAK. Thank you.

The next witness will be Don Ferguson, representing the soil conservation districts of the State.

STATEMENT OF DON FREDERICKSEN, IDAHO ASSOCIATION OF SOIL CONSERVATION DISTRICTS

Mr. FREDERICKSEN. Senator Dworshak and Senator Young, I have submitted a statement and I won't enlarge on it very much.

(The prepared statement referred to follows:)

STATEMENT OF IDAHO STATE SOIL CONSERVATION DISTRICTS

The Idaho Association of Soil Conservation Districts is concerned with water and related soil problems. Idaho has abundant water resources that have been partially utilized. We feel that it is important to the future economic welfare of this area for a study to be made wherein consideration is given to keeping water at the higher elevations, to expanding downstream water control works for storage of irrigation water, to improving irrigation, to prevent floods, and to accelerate research.

Water retained near where it falls is very desirable. Future beneficial use is possible and the problem of excessive runoff water is reduced. This could be helped by the construction of retention dams in the upper reaches. The present method for doing this under Public Law 566 is not accomplishing the job. Cost-benefit ratios are unable to be met by local people. If the same situation, on a particular watershed were considered 20 years hence, then perhaps the project would be cheaper to do now, with additional help from public funds. These watersheds at the higher elevations could be improved by having better soil conditions and cover. The soil is a great natural reservoir for water if it is in a condition to accept the moisture. Downstream storage is not fully developed in Idaho. The beneficial use of the water runoff could be increased with adequate storing of water in some of the natural sites. Diversions of these waters to agricultural, industry, and domestic use is possible and desirable.

Idaho irrigates much land and the saving from improved transmission of water and proper application could extend the supply. Inadequate distribution systems and incorrect applications to the lands and crops are probably the two major irrigation problems. With overapplication of water to land comes the problem of drainage. Waters that ruin bottomland are often high in salts or alkali. This complicates the profitable reuse of water for agriculture and industry. Too much water on some crops causes reduced production and waterlogging of soils, therefore improved irrigation practices are badly needed.

Flood prevention can be helped by better land use on watersheds. A natural watershed with a good cover is not apt to flood and bring the resulting problems. However, since unseasonal torrents do sometimes occur and the flood plains are damaged, retention reservoirs would be desirable to take the peak flow. To predict general winter moisture and potential runoff more extensive use should be made of snow survey data. Where floods are predicted, control structures such as dams and diversions could save damage and the water put to beneficial use.

Water is important for recreation and wildlife. In the development of water resources this should be given serious consideration.

To accomplish desirable results on some of the problems, we recognize more research is needed. The Idaho Association of Soil Conservation Districts is aware of the report prepared by the Department of Agriculture to the Senate Agricultural Committee on Appropriations entitled, "Facility Needs, Soil and Water Conservation Research." This report is published as Senate Document No. 59 to the Kerr Senate Subcommittee on Water. The Idaho Association of Soil Conservation Districts endorses this document and requests the Kerr committee to give it their support.

Mr. FREDERICKSEN. In Idaho water is our most important resource and we feel that the problem we have here is keeping it as high up as we can on the watershed and using it over and over again. One way that could be done is small retention dams and then we must also improve our soil conditions and cover on our watersheds. After we get it in our canals and reservoirs we must do something to reduce evaporation or whatever we can, and eliminate seepage in our canals. In some of our channels we have 30 to 40 percent loss before we ever get it on our cropland.

That is too big a loss and we should do something about it.

Senator YOUNG. How many small watershed projects do we have under construction now?

Mr. FREDERICKSEN. I don't think there are any. I was going to come to that. It does not seem to do us any good. The Small Water Projects Act does us no good in Idaho.

Senator CHURCH. What is the reason for that?

Mr. FREDERICKSEN. The cost-benefit ratio seems to be it. There is so much public land and so few amounts of private lands that the cost is too great, that the private landowners cannot pay the cost.

Senator CHURCH. A number of investigations have been made for small watershed projects.

Mr. FREDERICKSEN. Yes, many of them.

Senator CHURCH. But we have had hardly any come to fruition.

Mr. FREDERICKSEN. No.

Senator CHURCH. What about the procedures, Don, set up under the law? What do you find in actual practice? Is this a problem, too, or is it mainly the other, mainly the cost-benefit ratio?

Mr. FREDERICKSEN. I believe that the main trouble, Senator, is that the cost-benefit ratio—I think if we look in the future maybe 20 years from now, maybe the value of that land at that time would justify some of these small projects.

Senator CHURCH. How many soil conservation districts do we now have in Idaho?

Mr. FREDERICKSEN. I believe it is 51, Senator.

Senator CHURCH. Fifty-one?

Mr. FREDERICKSEN. Yes.

Senator CHURCH. You know a lot about these soil conservation districts, the history of them is excellent so far as soil conservation practices are concerned, and they represent cooperative effort on the part of citizen groups to follow sound soil conservation practices.

Mr. FREDERICKSEN. That is right.

Senator CHURCH. What about the kind of expert help available? Do we have enough of it here to serve the needs of the existing soil conservation districts?

Mr. FREDERICKSEN. We do not, Senator. Every district has requests that it will probably take them years to fulfill. We do not have enough technical help.

Senator CHURCH. What proportion of the land is now covered by soil conservation districts? In other words, what is the potential for growth, Don, as you look ahead?

Mr. FREDERICKSEN. Let's see. It must be right at 90 percent of the farmland of Idaho are within soil conservation districts.

Senator CHURCH. Already within soil conservation districts?

Mr. FREDERICKSEN. Close to that. I might be off on that.

Senator CHURCH. Another half dozen of soil conservation districts could be established that would cover the remaining lands?

Mr. FREDERICKSEN. It would cover the rest of the State.

Senator CHURCH. How many additional soil conservation experts, engineers, do you think would be required to fairly meet the needs of this State? Can you give the committee an idea of the additional number that your experience would indicate your needs require?

Mr. FREDERICKSEN. We need nearly twice as many as we have.

Then if I may go ahead. We feel that a lot of these problems we need increased research and use of water and saving of water and we would like to ask this committee to study this facilities need soil and water conservation research report. I believe it is Senate Document No. 59, is that right? I believe that is it.

I believe that is all unless you have questions.

The CHAIRMAN. I have a question.

Mr. FREDERICKSEN. OK.

The CHAIRMAN. I heard you refer to what the value of the land would be. Do you happen to know when the first reclamation project was started in Idaho? It is here in the record. Somebody told us earlier.

Mr. FREDERICKSEN. That was back in the early 1900's. I don't know I have only lived here since 1912 on an irrigated ranch.

The CHAIRMAN. I know the Governor's statement indicated an average value at that time on all of the irrigated land in Idaho as being 700,000 acres under the Carey Act. It now has a value of $400 million. That would be between $550 and $600 an acre, if my mathematics are accurate. What do you suppose the value of that land was before they started the irrigation project?

Mr. FREDERICKSEN. Nothing. It had no value before they started irrigation projects. We have a lot more land in Idaho that is practi-

cally useless unless we can get water on it, and we have the water if we handle it right, that would be worth every bit that much. We have the third largest irrigated acreage in the Nation now, Idaho has. Potential for probably that much more.

Senator CHURCH. It is third to what? California?

Mr. FREDERICKSEN. I think California and Texas have more irrigated land than Idaho. I believe that is right. Maybe Texas isn't in there, but I think it is.

The CHAIRMAN. I am sure California would be.

Mr. FREDERICKSEN. Yes.

The CHAIRMAN. I am familiar with the school of thought that says you should not build a highway until you have the traffic to use it. You shouldn't build a railroad until you have the business and the industry to support it. I gathered from what you said that your position is that if you build the facilities to improve it in the right environment, the growth and development will not only support the improvement but also the community, the county, the State, and the Nation.

Mr. FREDERICKSEN. That is right. That is the way I feel.

The CHAIRMAN. That is a very constructive approach, I think.

Has the value of land in Idaho been generally up over the years in spite of the fact that at times there would be lowering in value?

Mr. FREDERICKSEN. Yes; it has been generally up. It is still going up.

The CHAIRMAN. And is there any doubt in your mind but what that will continue to be so?

Mr. FREDERICKSEN. Not the least. I am sure it will keep and continue. I tell my boys if we can hang on to the land we have, by the time they are as old as I am or older, it will be really valuable.

The CHAIRMAN. It is pretty valuable now.

Mr. FREDERICKSEN. It is, and very important, too, I might add.

The CHAIRMAN. Thank you, Mr. Fredericksen. I like that philosophy.

Mr. FREDERICKSEN. Thank you.

Senator DWORSHAK. Mr. Chairman, the next witness will be Asher B. Wilson, who deferred his appearance.

The CHAIRMAN. I want to thank him for that.

Mr. WILSON. I would defer to the Governor if you desire him to go first.

The CHAIRMAN. Charlie, they deferred to you. If you come now you would be sure at least of one person in the audience, because he is the next witness.

STATEMENT OF CHARLES GOSSETT, NAMPA, IDAHO

Mr. GOSSETT. Mr. Chairman——

The CHAIRMAN. Be seated, Charlie. Sit down if you like, or stand if you prefer.

Mr. GOSSETT (continuing). Distinguished guests, and ladies and gentlemen, perhaps there is no better time for me to attempt to tell you what is in this little paper, at least a part of it, than right now.

After having had lunch with Senator Kerr and Senator Church, and having Idaho trout, that should put one in a very good position.

I was told to be sure and be specific and not have more than two pages. I went one better and had the girl to double space it so it will not take me very long.

We have heard this morning about Idaho's water resources from various individuals. I am listed here on this sheet as a water user, and I am and have been since 1922 on the Boise project. I want to say to you at this time that the Idaho water resources hearing is timely, for if we are going to maintain our prestige in the world of nations and continue to be a leading power among those nations, it is going to take the united efforts of all of us. As far as Idaho is concerned, it is time for action, especially southwestern Idaho, the Boise and lower Snake River districts. We have gone along in our everyday life and failed on many occasions to take a look to see what is happening among us and we wake up and find ourselves in the back door of a population of 20 million in the Pacific coast. Those figures are approximate but they are not far from correct. And they are looking to us for food, fiber and things that go in and help them make a happy life. We have a lot of those things here now. But we have an opportunity to produce many, many, many more things that they will enjoy and afford us a market for our toils and for our production from agriculture.

We wake up now and we find the Boise Valley and the lower Snake region an importing territory of foodstuffs, fodder and grains. That has all come about in the last few years. I will say not more than 12 years at the most.

For more than 12 years, or about that time or a little more we have been shipping into Idaho live pork products in an amount that is difficult to determine. That would surprise you. You would not have believed that a few years ago, but that is true today.

In addition to that we are bringing into this territory thousands of tons of hay, into the Boise Valley, I am speaking of just the Boise Valley, thousands of tons of hay to feed our livestock. Likewise, hundreds of thousands—I am going to use that term because I think it is conservative—hundreds of thousands of tons of grain.

Right now, only 90 days from the completion of our harvest we find feed grains coming into our territory from as far away as Montana, we will be bringing those grains in from as far away as the Middle West and maybe some from Oklahoma and Texas.

Right now I know some boys that are trying to buy, Senator, some of your milo down there to bring in here to feed our livestock. I am sure this is a surprise to many of our citizens who live here day after day. I happen to be in direct contact with that business and I know a little something about it. It is difficult to get the figures but it is happening every day.

This is brought about by the fact that in the Boise Valley we have five meatpacking inspection plants. In other words, we have all of the Federal meatpacking inspection plants in the State of Idaho located in the Boise Valley. I don't know how many of you are familiar with that. There are only five in the State and we have them all here. They kill this meat, slaughter it, sell what they can locally and send it out. In a State plant we can't do that. We have to sell locally because we have not Federal inspection. But these five plants—and they are major plants—kill day after day, five days a week, sell what they can locally and ship it to the Pacific coast. None of it goes east. There was a time when all of the production went east that we had over and above what we could consume.

Armour & Co., who is one of our major packers in the Boise Valley today made a survey and they came up with this. They are no slouch at anticipating their movements and they are here in the Boise Valley. They came up with this: That the Pacific coast will require 100,000 head of beef cattle each year for the next 11 years.

The CHAIRMAN. That is an increase?

Mr. GOSSETT. An increase over and above what they are consuming now. I would not attempt to tell this group of people that Idaho can furnish all of those cattle or all of the commodities that they will need down there. But if you will give us some more of this good water—and we have some that is not contaminated by the salmon or anything else, and we have some on this side of us behind us that is good clear water—bring it down here and put it on this sagebrush acres, we will make an honest attempt to produce a lot of stuff and we think we can do it.

At the end of 11 years the Armour Co. says it will require a million more head of cattle to satisfy the needs of the three Pacific Coast States, after 11 years. A million more each year than they are now consuming. So that in itself is not to be sneezed at.

We have here land and water available for 460,000 acres in this territory, not in the State of Idaho, but in the Boise and the lower Snake Valley. We have the water for it. All we need is the team to get it together.

You know, some of you younger fellows don't remember this, but the older boys will. Way back in the early days we used to have a lot of freighting in and out of here. When you hitched up a freight train you tried to get them hooked up right. In other words, you tried to get your leaders, the ones that led your team, you tried to get those in front and the wheelers behind. I think Idaho is right to get a team that will go out and camp on the members of our delegation, including the Senator from Oklahoma and the Senator from North Dakota, or South Dakota—which is it?

Senator YOUNG. North.

Mr. GOSSETT. Camp on their doorsteps early in the next session of the Congress and offer to you any help that we possibly can to bring it about, this reclamation that we so earnestly need.

There is some opposition and one of them is this: "We don't want to bring any more water in, any more land in cultivation, as long as we have the surpluses that we have."

I want to ask those folks that have that kind of a feeling or impression if they themselves had three loaves of bread and one of them was surplus, if they would wait until they were all three consumed before they planted any more wheat to produce a loaf of bread. I want you to think that over, my friends. It is no little job to bring about the construction or the start of construction of an irrigation project. It takes years and it takes years after that to bring your land into cultivation.

I want to clarify my position here. I think I should. I am listed here as a water user. I am here on my own. I have no land that has no water nor neither does my family. I am here solely in the interest and the benefit of southwestern Idaho as a whole.

There is another line of thinking that this development that I have been trying to talk to here is too expensive. To those who think like

that I want to say this. As expensive as it may seem there will not be any projects from here out that will be developed any less expensive because the cheap ones, the easy ones have long since been gone and developed.

It has been a pleasure to appear before you fellows and I sincerely hope when we come back to Washington to ask for your help and your assistance to help us secure this water for these lands that we will find you willing and able to help us.

I thank you.

The CHAIRMAN. Thank you very much.

(The prepared statement follows:)

TESTIMONY OF CHARLES C. GOSSETT, WATER USER

This Idaho water resources hearing is timely for if we are going to maintain our prestige in the world of nations and continue to be a leading power among those nations, it is going to take the united efforts of all of us. As far as Idaho is concerned, it is time for action, especially southwestern Idaho, the Boise and lower Snake River districts. We have gone along in our everday life and failed on many occasions to take a look to see what is happening among us and we wake up and find ourselves in the back door of 10 million peoples in the three Pacific Coast States who look to us (along with their own resources) to feed and clothe them and to make them a happy and contented people. We also find that this territory of ours here has become overnight an importing territory of foodstuffs, feeds and fodder which will be a great surprise to many of our citizens. We have, for a number of years, shipped into the Boise Valley, live and processed pork products to an extent that is difficult to determine.

We find that annually we are hauling into the Boise Valley, thousands of tons of hay from other territories to feed our livestock and hundreds of thousands of tons of feed grains for the same purpose. Right now, within 90 days of our harvest, there is being imported to this territory feed grains from as far away as Montana, and long before another corp is produced, we will be importing from the Middle West and no doubt from the South, in order to supply our needs. This is brought about by the fact that we have located in the Boise Valley, all of the Federally inspected beef slaughtering plants in the State. These beef products, after supplying our local needs, are shipped to the Pacific coast, and I think it is safe to say that none go East. We find that these carcasses of dressed beef that go to the Pacific coast are sought afer very readily. Armour & Co., which is one of our major packers, has found through a study they have made, that it will require an increase of 100,000 head of beef cattle each year to supply the increasing needs of the Pacific coast, that by the time 11 years had passed, these markets would require a million head more for that year than they require in 1959.

The future of Idaho depends on the utilization of our water and other resources rather than on her industrial potentialities. Our abundance of water when applied to the sagebrush plains of southwestern Idaho will produce an empire that any State would be proud of, much more so than would heavy industrial development. We are the one State of the Western States that has water enough to supply approximately 400,000 acres of new land in the Boise and lower Snake River valleys, and that is more than we have under cultivation at the present time. These waters are here and going unappropriated to the sea, but there are too many territories in need of this water for us to remain in this condition for long. If we do not appropriate it and put it to beneficial use, someone else will appropriate it for their use.

Now the complete processing of these agriculture products and sending them to these marketplaces ready for the consumption of the consumer, along with what fabricating plants we can secure, will build an area second to none in the United States. Some will say the appropriation of this water and putting it to beneficial use on the lands is too expensive. I want to make the statement here and now that there will never be another project built from here on that will be any cheaper.

In regard to surpluses, some of our people will say that we should not undertake any more expansion until our surpluses are used up, and to them I want to ask this question: If any one of them had three loaves of bread, and one loaf

was surplus, would he wait until all three loaves were consumed before he planted wheat to produce another loaf of bread? I am going to clarify my position in the testimony to the effect that I have no land nor does my family have any land in this area, therefore, my testimony here is given freely and without cost to anyone for the sole benefit of southwestern Idaho and Idaho.

It is a pleasure to appear before this committee and I hope they realize that it is time for action in southwestern Idaho, and I sincerely hope that they will be able to give us some help on these problems.

Senator CHURCH. Thank you, Mr. Chairman. I want to say that I appreciate the statement that Charlie Gossett has given. He is a citizen of this State who had been elevated to the highest and most responsible public offices that the people of this State have to offer. So much so that I never know how to refer to him, Mr. Chairman, as Governor, or Senator, because he has been both.

The CHAIRMAN. I will answer that for you. I have been both. When anyone seems in a quandary as to what to call me, I say it is immaterial what they call me, just so they call me.

Senator CHURCH. The people of Idaho have always called upon Governor Gossett. He speaks for the public interest. I think he has made that plain in the testimony he has given before the committee today. It has been very effective testimony and I want to join with the other members of the committee in commending him for coming here and giving us the benefit of it.

Mr. GOSSETT. Thank you, Senator.

The CHAIRMAN. I have two observations aside from saying I am very glad to see you. Number one, you spoke about the necessity of producing more feed and the opportunity of producing more feed so that you could help supply the increasing demand of the West Coast States for good beef. I don't think that you ought to limit your objective to helping supply the increasing demands for good beef to the West Coast States. I heard you say that Idaho was shipping in pork. All I can say is that I think you ought to have the feed and supply of good beef to fill that demand so that it would not be necessary either for Idaho to ship in meat and certainly pork, in order to supply the food needs of her own people.

Mr. GOSSETT. Senator, might I enlarge just a moment on that statement? I am very glad that you show that interest. I happen to be the owner of a little packing plant here in the city of Boise. It is a State plant. It is a very small plant. Last year we shipped in from the Middle West, this little market of ours shipped in over 3,000 live hogs in order to have pork for our customers in the State of Idaho. Right alongside of it you have Swift over in Nampa, you have Armour, and at Caldwell you have Bendede, the Idaho packers. Neither Swift nor Armour slaughter any pork in Idaho. They ship in their processed products, the pork products and distribute from here. We are losing all of that processing as well as the market for the hog to start on.

The CHAIRMAN. I think that is tragic. I was thinking how much more wonderful it would be if you were in position to supply the same customers their products in the form of processed Angus beef.

Mr. GOSSETT. Senator, we do not have enough land to produce the feed to produce the hogs.

The CHAIRMAN. That is one thing. Now, the other thing I wanted to address myself to was your remarks about the surplus food that we

have. As far as I know this is the only nation on the earth who has any of its people that regard a surplus of food as a burden or a curse.

You know, there is quite an interesting story in the first chapter of Genesis and quite an interesting verse in the second chapter, about the creation of the earth and about man's responsibility with reference to it.

I have often wondered what the Creator would say if the rulers of the earth were permitted to come before Him now and make a report on their stewardship and observations on the position they are in. I can imagine the rulers of these 1,750 million people of the earth, whether they be Chinese or otherwise, who would have to report that they needed ways and means to enable them to produce more food for their people, at least half of whom went to bed hungry every night and hundreds of thousands, yes, millions of whom starve every year. My guess is that if they were permitted to make their request of the Creator, it would be that their people be blessed with more fertile soil, with means of making it more productive, with the understanding of how to handle it so that their deficit, their shortage of food, might be turned into condition of a sufficiency or abundance or even some to spare.

Then I often wondered what the response of the Creator would be if the leaders of our country came in and lodged the complaint that our people in this country had so developed their productive processes, their methods of operation, had so developed the fertility of their soil, where each year 1 out of 10 of our population or 10 percent of our population were able to produce all of the food that the entire Nation required and had a surplus. My guess is that if in making a statement of that condition, representatives of this Nation were to call upon the Creator for relief of that burdensome or cursed condition or position, it might be that He would grant that request. It might even be that He would permit the situation to be developed whereby we would exchange positions with such a great portion of the earth and such a great percentage of the world population who now have too little and let some of them be burdened for awhile with having to live in an environment where they would have an abundance of food and even some to spare.

Senator DWORSHAK. Mr. Asher B. Wilson of Twin Falls, Idaho.

STATEMENT OF ASHER B. WILSON, TWIN FALLS, IDAHO

Mr. WILSON. Honorable Senators, I prepared a statement here which has been covered to some extent by others. Of course we are all for reclamation out here and all for development of water. The question is just how to develop the water and to take note of the mistakes in the past and not make some more mistakes that we did in the past. I happen to live on the best watered tract in this State and probably the best watered tract in the world, a Twin Falls tract of some 2,300 acres.

Senator CHURCH. Wasn't that actually at one time the largest irrigated tract in the world?

Mr. WILSON. At one time, yes. Not now.

Senator CHURCH. I understand.

Mr. WILSON. Over in Washington there is going to be 2 million or more when they get through, as I understand the project of their irrigated land. This was created just after the 1902 act of reclamation.

Of course we are under reclamation. But we were put together by an individual, you might say, a fellow named Frank Bull who had the money. They get hold of him and got him to put it up.

Our water cost us $25 and the State land came in under that only cost $15. That was a cheap price in that day. We had a good water right. We came up short in 1919. That was the year when the water didn't get in the river. Along in the twenties we went in with the North Side Land & Water Co. at the upper Snake River and helped to build the American Falls Dam. So we have a percentage in that. I think maybe the percentage in that is about 20 percent of what we had originally out of the river.

Now, the Goose Creek, which would be down by Oakley, the Salmon River tract, which is down by Oakley, the Salmon River tract, which is down by Hollister in my own county and the Jerome tract over there known as Twin Falls North Side, they were put on by the Kuhn interests shortly after this Twin Falls one was formed and started.

Each one of those were short in water. They sold more rights for water than there ever was in the river or to be obtained.

The Salmon tract sold 140,000 acres and finally it was cut down in Clayton's time—that would be about Wilson's time or the last of Wilson's time, I guess—he was the Reclamation Bureau man there in Washington—to 20,000 acres.

So you can see the suffering that went on there with those people who bought those water rights and had to give them up and go away and make a living at something else and the bondholders who were enticed to buy those bonds who got little or nothing back. That was also true on Great Twin Falls North Side tract. The bondholders never, and I think this is correct, got back a penny on the principal and only some upon the interest that became due over those long years. In fact, I happen to be one of those bondholders myself.

Something should have been done in that day to have precluded these fellows from overselling water rights and that is the thing that Congress should watch now on any of these projects you put up, that they don't oversell and don't get it so high you can't pay for it.

The King Hill project out here is the glaring one where the Federal Government put in, I think, millions of dollars, the State put in some and lastly, they had to throw it overboard, all of it.

That is the first thing to watch and develop water. We all want to develop what we can. We want any marginal one fixed up. But we don't want any more messes like we had in that day.

Governor Gossett here I know is just a newcomer. He only came in 1923 and Henry, I think, came in 1926, the Senator over here. They are newcomers. I came here in 1914. I got caught and could never get away. Of course the gray hairs came and I will never get away now.

I had a little to do with some things in the State during this time. I was for 20 years on the Board of Regents at the University and State Board of Education. I was for 3 years on the committee that was formed to reevaluate education of this State. In fact, I was chairman of that. It was my privilege and duty to rewrite practically all

of the laws of the State on education and we were told when that was done that the constitution did not permit, and all that. But to this day after some 12 years the Supreme Court has never touched one of those.

So I think maybe I got some pretty good advice from some lawyers in the State that I know that helped to write those things. But that is just to show you my background.

I own land down there at Twin Falls. I got some in 1915 and sort of added to it through the years, not knowing anything better, and still have it. Therefore, I am interested and of course I am sort of apologetic for the things that have gone on that we did not correct as we went.

For instance, when we built the American Falls Dam we should have had the power in there. We didn't. Idaho Power Co. got that and got a million dollars along with it. Those are the things that are going on that keep taxation high down my way.

I happen to be on the Union Pacific on the branch line. So we are burdened with extra freight rates, although we are only 60 miles off from the main line and furnish the big bulk of transportation. That made the Union Pacific rich on freight.

Those are the things that happen to us and continue to happen.

Now, the future development of water in this State should be made not to permit the same pitfalls I have just told you happened. You should safeguard those by legislation or something before you go into them.

I heard about this McGuffy thing here from three angles, apparently, today, three different ideas. As I understand, they propose picking up some water down there and taking it up here and taking somebody else's water and transferring it around. I say the United States better be careful about sticking their hands in there until they know the things are all dovetailed together and you are not going to ruin the whole valley down here. If you can do it, that will be swell. I wouldn't do it unless you had it tied up in a sack and knew what you were working with.

One other thing touched upon here lightly, I want to say—I want to get away so others can—is the matter of transportation, gentlemen. The only thing that has been said here today about water transportation, what little was said about this, we saw a bunch who apparently have done what they are doing for recreational purposes.

We need to clear the channels of Snake River as far as Shoshone Falls for transportation the year round by barges and boats and it can be done. I believe it can be done cheaply.

The CHAIRMAN. To the Pacific, you mean?

Mr. WILSON. Pardon?

The CHAIRMAN. Navigation from here to the Pacific Ocean.

Mr. WILSON. That is right. It goes down Lewiston. That is opened up at Lewiston on the way, sir. They told you here today, as I understand it, may well open up Owyhee clear down here to Napa. I was surprised at that. If that is true the Congress and our representatives ought to get after that right now and see about developing that because we cannot stand these high freight rates. We in the Northwest here who do not have watercourses now are going to be as poor within the next few years as were the Southern States after the Civil War, and when you get in that condition you are going to be in bad shape.

That is going to be the shape we are in if we don't get relief from this freight thing. It can be done.

I noticed the other day where some fellows went up in boats up the Colorado River and over all those rapids. It didn't cost them much. You can get that down here and apparently this Weiser outfit has it down past them and you can get it down to Shoshone Falls. And from there you can go up the headwaters and drop in barges that will come down. You have to lift them over Shoshone Falls, over the falls, and they will work from about November to April.

You say "What commodities are you going to take"? You are going to take beans, you are going to take wheat, and probably other commodities we will produce. And they go around through the canal. We don't lose anything by it. In fact, your beans get so dry down here by the time they get to Boston they probably gain 10 percent in weight going through the water. Those are the things we need to give attention to if we are going to continue to live here.

You go back to the first lands that were ever watered or cultivated along the waterways and that was way back there. Then we took on the railroads and subsidized them. They talk about subsidies now. You got a little pamphlet issued to you here not too long ago telling about subsidies, who got them and when they got them and all, who gets the big subsidies. Agriculture only got a small percent of the subsidies.

Those are things, gentlemen, that I firmly believe that we should give attention to not getting in the same traps again and do the things that ought to be done, don't destroy the water courses and I am not for any State saying that the Government can't help to create a waterwal for me for transportation of products. Charlie Gossett has to buy some hay down my way and that is the place he has to come for it, by the way. He has to pay a hell of a price this year, $25 a ton, seven and a half for transporting. If he had the water course open he would pay about two and a half for transporting, you see. Those are the things we need. This thing of wanting to do everything by States, there is nothing to it, boys. I might have been a State's righter one time but I am not for destroying transportation and things like that.

Another thing, this thing about taking my water right away from me. That has been cried to me ever since I went out there in 1914. There is some old decree way back there. It was put up that the duty of water was so much on the Twin Falls tract. We used up much more than that now. The answer to that, gentlemen, an action must be brought to redetermine the necessity for water now. Then the soil was fertile, it had plenty of fiber in it. It didn't take as much water. The fiber is all gone and we cannot produce enough fiber to take care of that. We have to put on the fertilizer, commercial fertilizer, and we have to put the extra water on it: so fertilizer won't work, you see. The water goes down the courses and it takes longer now.

I am not afraid of that. They can make all the hoopla they want to taking my water right. I don't think they can do it and I will fight it to the end and I think all of my neighbors will, too.

For the farm bureau, what they stand for, John Sanborn is a good friend and was in Congress and he made a pretty good Congressman

when he was down there, John did. He got pretty smart and wanted to go to the Senate and he is down there farming just like the rest of us are and he is just a little below us. As far as Guffey and all of those is concerned, make sure you are not going to destroy a bunch of men to put the money up to finance this thing so Charlie Gossett can have hay and grain. He has to buy grain down our way to farther north of Shoshone.

I am very sorry to have taken your time, but I think that I should give your attention to this and I give it more specifically in that thing.

Thank you.

The CHAIRMAN. Thank you very much, and your statement will be made a part of the record as you submitted it.

Mr. WILSON. Thank you.

(The prepared statement referred to follows:)

STATEMENT OF ASHER B. WILSON, TWIN FALLS, IDAHO

First, national water resources are tied closely to activities in the United States, in use of water for irrigation, manufacture and use of hydroelectric power, in transporting commodities by water throughout the United States as well as internationally, in controlling floods and other uses.

Second, in extent and character of water resources activities governmental and otherwise, with proper reservation for fish, wildlife, and recreation, between the present and 1980.

Much more attention must be given to transportation of agricultural and other products by boat and barges, on the rivers of the United States.

The larger aspects of this problem must be arranged by the U.S. Government and the States, for the benefit of the producers of agriculture and other products, thus providing transportation at a much cheaper rate than is being furnished by railroads and trucklines.

Water developments for flood control, manufacture of hydroelectric power, providing a proportionate share of water for supplemental water users whose water rights are insufficient, and development of new irrigation tracts where water can be made available without lessening the use of water for water transportation of agriculture and other products.

Third, other information that will be helpful in considering water resources policies is:

The fact that 100 years ago it was recognized, although slow to do much about erosion, caused by changing of channels of the many rivers, including the Missouri, Mississippi, Ohio and many other rivers. One of the many occurrences was on the Missouri, near St. Joseph, Mo. about 70 years ago where the river's channel constantly changed until it finally washed away my own uncle's homestead of 160 acres. Thousands of landowners have in the past lost their lands by the same type of erosion However, Missouri, Iowa, Kansas, Nebraska and many other States through their congressional delegations secured some types of relief which more recently includes building of dams to hold the floodwaters, which dams have been used to create hydroelectric power sold at a cheap price, enabling the manufacturing of products in the territory as well as for domestic use, thus reimbursing the Government for expenditure made for dams and power equipment.

Not much irrigation was accomplished in any of the States until after the Federal Reclamation Act of 1902, which provided impitus for irrigation, doing wonders for the dry, fertile lands of Colorado, Utah, Idaho, Montana, Washington, Oregon, California, Arizona, New Mexico and other States.

One of the large tracts irrigated in the early days under the Reclamation Act was our own Twin Falls, contracted for by the Twin Falls Land & Water Co., covering 203,000 acres which was finally turned over to the Twin Falls Canal Co. an operating company for distribution of irrigation water.

The above development was followed closely by other reclamation projects in Idaho; the Goose Creek project near Oakley, Idaho; Twin Falls North Side Tract, and the Salmon River Tract on the Little Salmon Creek in Twin Falls County, Idaho, all sponsored by the Kuhn interests of New York, each instance much more land was offered for filings on than there was water

available to supply irrigation. The outstanding one in the group was possibly the Salmon River Tract on which 140,000 acres were signed up to be watered and finally was cut to 20,000 acres which was not well watered, causing much suffering by the many who filed for irrigation as well as the loss to bondholders who financed the construction. The most prudent one of that group was the Twin Falls North Side Tract, but it required reducing, and in latter years supplemental water, with the bondholders losing most of their interest as well as the principal invested.

Other projects in Idaho sponsored by others which failed to have water sufficient to develop, is the Gooding Tract-King Hill Tract, which was the worst lemon of all, and the Mountain Home Tract and several others.

All of this misery could have been saved had the Government placed restrictions on the operating companies, the millions of dollars lost by the bondholders and the time and money lost by the thousands who made filing on the lands under the segregations, to later find that little water was ever to be delivered to them for irrigation purposes. Your speaker is one of the bondholders on the defunct Twin Falls Northside Land & Water Co., now formed by the bondholders committee into a corporation for handling purposes with little prospect of remuneration to the old bondholders, now the stockholders of this corporation.

I was quite well acquainted with the irrigation problems in Colorado during the turn of the century, which were similar in many respects to Idaho's with less water at that time available for correction purpose. But in recent years the Government's construction of dams on the east water slope of the mountains in Colorado has worked wonders for their irrigation problems as well as production of hydroelectric power. Continuation of the Government's work in this field is very necessary, now and for the years to come. Recent talk of orderly continuation by the Government through the engineers or/and the Bureau of Reclamation of a study concerning the possibility of enlarging the Salmon River tract in Twin Falls, Idaho, to nearly 100,000 acres, has locally produced the theory that the water for such a project would come, a small amount from the Burns Creek Dam to be constructed on the upper part of the Snake River, a large percentage to be taken from existing water now being used in canals and irrigation districts, who are by some advocates of this Salmon River project, charged with wasting water above necessary use.

Consideration by Army engineers and U.S. Reclamation Bureau must re-evaluate the use of waters for irrigation on irrigation tracts along the Snake River and its tributaries, under present conditions, rather than accepting the old court decrees of nearly 50 years ago, which decrees need modifying to conform with the actual necessary use of water on the depleted soils, the richness in which has long since been washed way, lacks sufficient fiber to hold water applied, requires a longer period of soaking to penetrate the ground and dissolve the fertilizers that must be used for crop production including pastures.

The supplemental water rights through Jackson Hole Dam, American Falls Dam and other dams in Idaho and elsewhere in States under irrigation must be decreed through a revision of water uses for the many canals and irrigation districts, who paid for same.

It seems timely to give suggestion on watching the Palisades Dam in the upper Snake River Valley as it is rated as the largest earth-filled dam in the United States, and make sure that it is not overloaded. Such a dam in about 1890, the Jamestown earth dam caused that very disastrous flood, and about 50 years ago the Strawberry Dam in the Southwest and others met with defeat on account of improper watching.

Waters in the United States used for boat and barge transportation of commodities dates ahead of the beginning of our Government and even the settlement of the United States in some instances.

The first settlements were along the existing natural waterways in the United States; development proceeded about New York State as early as the fur-trading years of the past, the first boat coming into New York Harbor in 1524; West Point, N.Y. had a fort on the Hudson River as early as 1777, boats as you know reached Half Moon in New York as early as 1609; Champlain Canal in New York was completed in 1823; Fort William Henry, south of Lake George was captured from the British by the French in 1757. The Erie Canal coming into Lake Ontario was completed in 1825; Canals throughout the United States have been constructed, as you know, from time to time, for water transportation, until now the St. Lawrence Waterway has come into realization and at a time when cost of rail and truck transportation is prohibitive; this shows us the necessity for

water transportation development, in every instance, where water is available to permit agriculture and other products to be given a cheap transportation rate, for the benefit of all the people of the United States as well as those served internationally with our products.

We in Idaho will come in on that water transportation through the proper clearing of the Snake River channel from Lewiston to Weiser. Up the river from Weiser to Shoshone Falls just north of the city of Twin Falls, the year round; and by proper lifts from Shoshone Falls via Milner some 22 miles and on up the Snake River to its upper reaches through barge transportation at times of year from about November to April each year; for your information there has been sufficient water in the Snake River to float barges at the stated times down to Shoshone Falls and the year round by boats from Shoshone to Lewiston. This to be assured through proper bypasses being built at places where the river now has dams and providing that future dams make provision for such bypassing before such dams are constructed.

Most Idaho products from agriculture, timber and mining can be shipped by river to the west coast as could products of other adjoining States, down through the Panama Canal, up past Texas and other southern ports to New York and on up to the St. Lawrence waterway. The water transportation should be investigated and construction started at earliest possible date.

Agriculture, timber, and mining are in difficulty, in Idaho, Montana, Washington, Oregon, and other Northwest States, freightwise, pricewise. The product of these States is the lifeblood of the producers and must be cared for, without further delay.

Cost may be charged to the Federal Government on repayment plan for utilization of the dams, for flood control, creating hydroelectric power to be sold at a cheap price for the use of the people and industries of the territory where created, turning much of the raw product into finished product and thereby reducing the gross tonnage to be transported.

Water transportation is essential and necessary for proper development of Idaho and other surrounding States who are retarded on account of present high transportation costs; the railroad barons of yore are gone, with their riches; and other barons must be relegated to the rear, if we are to survive with our irrigated agriculture districts, mining and timber marketing.

Water transportation has played in the past, and more than ever now is playing, the crucial role in our continent's growth, with most vital point—agriculture, timber and mining—which pinpoints Idaho and other Northwestern States.

Subsidized water transportation was had between 1827 and 1866 to encourage canal building and subsidized railroads between 1850 and 1871. The Federal Government joins with some States in giving the railroads approximately 183 million acres of land. To shipping and air carriers the Government has assigned many millions of dollars. Aids and special services for years 1949 to 1955 as prepared for the congressional committees concerning subsidies are as follows: Agriculture, $3,777 million; business, $5,873 million; labor, $1,435 million; veterans, $32,687 million; and general aids, $9,888 million; and many other subsidies through the life of your Government.

Costs of clearing channels in the Snake River wide enough for proper transportation by boats and barges can with relatively small cost be ascertained; and such investigation should be started at once.

The recent survey of the Colorado River in small boats indicates how inexpensive and easily the Snake River survey can be made and thus determine the amount of channel clearing necessary, together with cost of such undertaking.

The giving of subsidies to waterpower companies, such as reported as late as August 25, 1959, by the Idaho Power Co. on waters developed by the Government and otherwise, which power can and should be available to the public, must cease, if we are to balance the costs of construction by the Government with benefits to the people not only of the area, but throughout the United States as well as other nations served.

Public power in Seattle, Wash., Idaho Falls and Burley, Idaho, and many other localities give testimony on the subject as to benefits derived by the general public in these localities.

Senator DWORSHAK. The next witness is John Brandt, representing the Nampa Chamber of Commerce.

STATEMENT OF JOHN H. BRANDT, NAMPA CHAMBER OF COMMERCE

Mr. BRANDT. Honorable Senators, water is Idaho's most precious resource. We commend you for your foresighted concern as evidenced by this hearing.

Nampa, Idaho, is a city of about 20,000 people and is the center of a population area of probably 100,000. The city's very existence is dependent on agriculture. Nampa has the second largest beet sugar factory in the world and the average yield of over 28 tons of beets per acre is almost unbelievable to growers from most areas.

Over 30 different crops are grown here. Forty-five percent of the total income is from livestock. Dairying is a mainstay, with a greater concentration of dairy cows than any other section in the country.

Nampa has two of the five federally inspected meat plants in the State—Armours and Keims. Birdseye Division of General Foods has a processing plant there. Many nationally known seed houses such as Northrup-King, Albert Dickinson and others are located here. Figures indicate that over 85 percent of the total production of hybrid sweet corn seed is grown in this section. A frost-free growing period of 180 days, with very dry summers are especially conducive to good germination and disease-free plants.

I cite these illustrations to indicate something of the type of community we represent, although it would take more time than we have available to do justice to it.

South of Nampa is an undeveloped area of perhaps 30,000 acres of wonderfully fine soil which could produce bounteous crops by the application of water—and we have the water going right past the land wasting down the river.

The Bureau of Reclamation has made extensive studies and surveys of this area together with certain lands to the east in the vicinity of Mountain Home, Idaho, which properly and logically belong in the same project. A dam across the Snake River would be built near the Guffey schoolhouse about 20 miles south of Nampa, and the water would be diverted by gravity and pumping, with the power for said pumping developed on the site.

Certain substitution or trading of water would be effected, whereby Snake River water would be used instead of Boise River water on presently irrigated lands, and Boise River water would be diverted to the new lands in the Mountain Home area. This entire development is termed the Guffey project.

We wish most enthusiastically to endorse the Guffey project. We do this from two standpoints.

The first is primarily local. We have need for this additional land. Many thousands of head of hogs and carloads of grain are shipped into this area. Hay is at a premium and is hauled from afar. Three hundred or more new farm families would be provided homes, enough land to each family that they would be able to produce for 15 to 20 other families—this in the immediate vicinity of Nampa. Over three times this many more would be included in the full Guffey project.

What a wonderful boon to this part of Idaho—and all by applying the water that runs to waste past our door to the fertile land now lying as a desert, except where a few hardy souls, because of the pressure for more land, have developed new farms by deep well pumping, often lifting the water 400 to 500 feet.

The growth of our city and other cities of the area would be great. New homes could be established, new jobs created, more food produced. And this brings us to the second reason. We are urging the approval of the Guffey project and the allocation of Snake River water to our desert lands.

Before we know it, we are going to need additional food in these United States. Throughout the world most of the people go to bed each evening hungry. Yes, hungry, because there is not enough food to go around. Our present surpluses are really small percentagewise. And our population growth is phenomenal, a veritable explosion. Moreover, a million acres of land is being taken out of production in the United States each year for urban and road development, to produce food no longer.

We must be concerned with posterity. It takes years to engineer and construct an irrigation project and to develop the farms for which water is thus provided. Do we dare wait until we have shortages instead of surpluses to start planning? Shall we eat up everything in the house before we plant crops to grow more food?

Progress demands foresighted, unselfish, bold planning for the future. We owe it to our children and our grandchildren to be concerned with their welfare. Your presence at this committee hearing is evidence that you recognize your duty to forthcoming generations and we commend you for this foresight and concern.

The Guffey project would help to stabilize the flow of Snake River. It would create a wonderful recreation area adjacent to a populous section with boating, picnicking, and fishing. It would produce its own power for pumping and appears to be economically feasible.

We urge the allocation of the water necessary to irrigate all of the lands under the Guffey project.

Thank you.

The CHAIRMAN. Thank you very much, Mr. Brandt.

Senator DWORSHAK. At this point, Mr. Chairman, I would like your permission to insert in the record a letter from John Hutchinson, representing a group from Challis, Idaho. He was listed as a witness but prefers to submit a letter.

(The letter referred to follows:)

CHALLIS, IDAHO, *October 13, 1959.*

Hon. ROBERT S. KERR,
Chairman, U.S. Senate Select Committee on National Water Resources,
Boise, Idaho.

MR. CHAIRMAN: My name is John Hutchison. I live at Challis, Idaho. I am here representing the 3-C Water District with specific reference to the Challis Creek project.

At the present time we are irrigating about 2,500 acres of land from direct flow of Challis Creek and we have about 1,000 acres of additional dry land which could be brought into production if water were available. With no storage facilities we are annually faced with serious water shortages on the presently irrigated land and have no opportunity to bring the additional area into production.

The average annual flow of Challis Creek is twice the amount we are presently able to utilize. What we require is storage regulation to make this unused water available. Development of storage on Challis Creek would not interfere with existing downstream users. There is a good damsite lying upstream from our

lands and storage water could be delivered by gravity diversion. There are about 32 ranches involved in this project and all the potential water users are in favor of bringing this development into being.

While our projects is small in comparison with many of the projects under consideration by the various resource agencies, we suffer from an inadequate water supply just as fully as the larger ones. We favor the maximum development of our land and water resources and we feel that the Challis Creek project would contribute to this objective.

We appreciate the opportunity of appearing before the Senate Select Committee on National Water Resources and respectfully request that the development of our Challis Creek project be considered at the earliest possible date.

Respectfully,

JOHN HUTCHISON.

Senator DWORSHAK. I also ask permission to insert in the record at this point a statement by Harry Noh, president of the Salmon River Canal Co. at Hollister, Idaho.

(The prepared statement referred to follows:)

STATEMENT OF HARRY NOH, PRESIDENT, BOARD OF DIRECTORS, SALMON RIVER CANAL CO., HOLLISTER, IDAHO

My name is Harry Noh and I live at Rogerson, Idaho. I am a farmer and livestock grower. I am president of the board of directors of the Salmon River Canal Co. and I have been authorized to make this statement on behalf of the board of directors.

Our purpose in presenting this statement is to briefly place before you the facts concerning the serious water shortage confronting our project, to review briefly proposed plans of the Bureau of Reclamation to provide a supplemental supply of water, and to urge, in every way possible, the completion of a feasibility report by the Bureau of Reclamation and the submission of that report to the Congress with recommendations that the project be authorized.

The present Salmon project, comprising approximately 35,000 acres, is located on the south side of Snake River in Twin Falls County south of the city of Twin Falls near the southern boundary of the State. This tract has faced serious water shortages since its inception in the early 1900's. The project started as a Carey Act project in 1908. The water supply comes from Salmon Falls Creek, which originates in northern Nevada, and flows northerly into Snake River. A large concrete arch-type dam was built in 1909 on Salmon Falls Creek, the highest dam of its type in the country when constructed. It was so located, however, that there was large leakage of the water behind it. In addition, much of the canal system was so located or constructed that there was a large loss of the water transported.

Water was first delivered to the farms of the Salmon tract in 1911. The original Salmon tract proposed to be irrigated contained 150,000 acres and was incorporated with 150,000 shares of stock. Because of the insufficient water supply due to a combination of these facts, the tract was reduced to 72,000 acres, and again in 1918, was further reduced to 35,000 acres and the number of shares reduced to 60,000. Despite this fact, the tract over the years has been drastically short of water. This is graphically shown by the following tabulation showing water deliveries per share of stock since 1924.

Year:	*Farm delivery in acre-feet per share*
1924	0.67
1925	.81
1926	.35
1927	.76
1928	.70
1929	.60
1930	.27
1931	.175
1932	.85
1933	.50
1934	.10
1935	.50
1936	.66
1937	.35
1938	.72
1939	.61
1940	.37
1941	.30
1942	1.00
1943	1.167
1944	1.10
1945	1.07
1946	.82
1947	.48
1948	.59
1949	.93
1950	.93
1951	1.10
1952	1.167
1953	.80
1954	.265
1955	.34
1956	.80
1957	.95
1958	.80
1959	.335

NOTE.—36-year average=0.665 acre-foot per share.

It will be noted that the 36-year average is only 0.665 acre-foot per share, or approximately 1 acre-foot of water per acre on the basis of 35,000 acres. It will be noted also that this year, for example, there was only approximately one-half of an acre-foot of water per acre on the basis of 35,000 acres. The settlers, of course, reduced the amount of acreage farmed, but even so, there has been great hardship and a terrific economic loss. According to the Bureau of Reclamation, a farm delivery of 2.85 acre-feet is considered a minimum amount. In no year of record have we ever come even close to this amount.

The land is of the highest type of fertility and of excellent topography. The whole area is well developed with roads, schools, towns, and excellent farm homes. The people on the tract are, as a whole, excellent farmers and, in those years when they have had even a semiadequate water supply have grown crops equal to those grown on the more widely known Twin Falls tract which has a full supply of water and which adjoins the Salmon tract on the north. I believe it is not open to dispute, no other irrigation system in the State uses the water as efficiently as does the Salmon tract.

The landowners on the tract have done everything within their power to help themselves. In 1947, at the cost of several hundred thousand dollars, they purchased all available ranches and water rights on the upper reaches of the stream in Nevada and transferred that water down to the Salmon tract. They have expended large sums of money over the years in straightening the stream in Nevada and in killing willows and other water consuming growths. Likewise, large sums of money have been spent in rebuilding sections of canals, eliminating laterals with large losses, and in repairing sections of the main canal where losses are large.

Finally, in 1954, through the cooperation of our congressional delegation, we requested the Bureau of Reclamation to make an investigation as to possible sources of supplemental water supply. The regional office of the Bureau did, in 1956, make two preliminary investigations. An investigation was conducted by the regional office into the possibility of diverting water from the East Fork of the Jarbidge River into the Salmon Falls Creek drainage in Nevada above the Salmon Falls Creek Reservoir. The investigation explored two possibilities for diversion. The findings indicated that the adoption of either plan could not be justified because of the extreme high cost to deliver the limited water available. The Bureau also made a preliminary appraisal of the possibility of using the storage flow of Rock Creek, lying east of the tract, as a source of supplemental water supply. The results of this preliminary analysis indicated that a development based on Rock Creek storage alone would not solve the pressing supplemental water supply requirement of the Salmon tract.

Following these preliminary investigations, the Bureau of Reclamation, during the past 2 years, has been engaged in an extensive reconnaissance investigation to determine the probable feasibility of providing supplemental water from other sources to lands on the Salmon tract. This has resulted in the issuance of a report entitled "Salmon Falls Project Idaho Reconnaissance Report" dated

February 1959, comprising some 80 pages. No attempt will be made in this statement to go into the details contained in this report, but I will highlight the more important features.

The investigations conducted for the report consisted of evaluation of engineering plans for diverting water from Snake River and delivering it to the Salmon Falls tract, together with related economic, water supply, and project land evaluations. Available information on ground water resources of the Snake River Plain were appraised in relation to the water supply requirements of the Salmon Falls tract and data from the Upper Snake operation studies and operating records and investigations of other developments were utilized. The estimates of facility requirements and the costs to provide Snake River water were rather general in nature but indicated in general the overall economic feasibility. The report also contains topographic surveys and reconnaissance geological investigations regarding the pumping plant sites and for the canal line route from Milner Dam on Snake River to the Salmon Falls tract. Also an agricultural economic analysis was made and land classification studies were conducted.

Of the many plans that might be effective in providing supplemental water supply, those involving use of surplus flows of Snake River and surplus flows of Rock Creek have the most promise. Water from Snake River must be diverted above Milner Dam, since the river enters a deep canyon at this point. In dry years the study showed that all the water of Snake River is completely appropriated above Milner Dam. Consequently, any use of Snake River water during periods of low water supply would require replacement.

A number of possible sources of replacing water which could either contribute to or fully provide replacement of the water supply which would be diverted from Snake River were studied. Among the sources investigated which could provide this replacement are:

(1) Obtaining storage from American Falls Reservoir that is now utilized for power production purposes.

(2) Development of ground water in the Snake River Plain north of Snake River that is nontributary to the river above Milner Dam. Water thus developed would be used in exchange for Snake River water diverted at Milner Dam and by discharging it directly into Snake River above Milner Dam it could be used without exchange.

(3) Utilization of water that would otherwise spill at Milner by modification of present storage operation and the addition of new storage. Storage operations could be coordinated with ground water replacement to increase the yield of irrigation water from the Snake River above Milner.

(4) The possible development of ground water within the Salmon Falls tract.

With respect to project works, the use of Snake River and Rock Creek flows would require a 37 mile canal between the Milner pool and the Salmon Falls tract. Snake River water would be diverted by pumping and surplus flows of Rock Creek would be picked up where the diversion canal route crosses Rock Creek. It would be necessary to relift a portion of the new water supply near the tract boundary. Within the tract, the imported water would be delivered into existing distribution canals serving a lower segment of the area requiring supplemental water. Salmon Falls Creek water now within the lower area would be applied to an upper 14,000 acre portion of the tract, the major portion of which lies higher in elevation than the point of entry of the new water. The available supply of water from Salmon Falls Creek to the upper area would provide an adequate water supply there.

Two development plans were investigated and are discussed in the report. The difference in the plans is in the total area to be served. One plan would serve the 35,000 acres of irrigable land that now have water rights in Salmon Falls Reservoir. The second plan would provide for the supplemental needs of this 35,000 acres of water right lands and also provide an adequate supply to some 15,000 acres lying east of the Salmon tract which do not have any storage right in Salmon Falls Reservoir. We, of course, are primarily interested in providing a supplemental water supply to the existing irrigated lands now served by the Salmon River Canal Co. which do not now have an adequate water right, but the overall cost figures indicate that the charge per acre would be less if the larger area were included. The report concludes that the delivery of water to the Salmon Falls tract from Snake River has engineering feasibility and that the lands on the project are well suited for the development contemplated.

Of the greatest significance to us, however, is that the regional office of the Bureau of Reclamation in this report unequivocally recommended that the Bu-

reau now undertake the preparation of a final feasibility report, and Bureau officials have advised us that the preparation of a final feasibility report will be undertaken. This report, we are informed, will contain more detailed engineering plans and cost estimates and a more complete analysis of financial and agricultural economic factors. This report, when completed, will then be the basis for a recommendation to the Congress that the project be authorized. We take this opportunity to commend the regional office of the Bureau of Reclamation for the excellent work that it has done in investigating feasible ways to supplement our deficient water supply. But we strongly urge that the report be completed at the earliest practicable date. We further urge that adequate funds to complete the feasibility report be appropriated by the Congress and when it is completed, and submitted to the Congress with recommendations, that it receive the sympathetic consideration of the appropriate committees of Congress. Our own congressional delegation is aware of our problem and has been most helpful.

It is our sincere belief that in any evaluation of the future development of the water resources of this area, which is now being considered by this committee, an important and integral factor, which cannot be ignored, is the furnishing of a supplemental water supply to the Salmon tract. It is our considered judgment, and I am sure that our views are shared by most of the farmers of Idaho, that in considering plans for future development of irrigation in this area it is more important at this time to provide supplemental water for existing irrigated lands whose water supply is inadequate than to bring in vast areas of new lands.

We appreciate the opportunity of presenting our views to this committee.

Senator DWORSHAK. Are there any other witnesses who have requested an opportunity to testify? I think we have exhausted the list which was prepared by the staff arranging this hearing.

Senator CHURCH. Anyone else that wants to come forward and testify is certainly welcome before we close the hearing this afternoon. Speak now or forever hold your peace.

Senator DWORSHAK. Ira Anderson, representing the Idaho Resource Development Council. Do you have a statement?

STATEMENT OF IRA ANDERSON, IDAHO RESOURCE DEVELOPMENT COUNCIL

Mr. ANDERSON. We have some statements here, Senator, 25 copies. I don't want to take further time of the group to listen to them. They are very complete. They cover the thoughts and thinking of the group composing the Idaho Resource Development Council.

The CHAIRMAN. You would like to have the statement inserted in the record?

Mr. ANDERSON. We would like to have it.

The CHAIRMAN. Very good, sir.

(The prepared statement referred to follows:)

STATEMENT OF THEODORE HOFF, JR., PRESIDENT, IDAHO RESOURCE DEVELOPMENT COUNCIL, BOISE, IDAHO

The group for which this statement is entered in the record is called the Idaho Resource Development Council. It speaks for both multiple use and conservation, for the two are synonymous. Conservation without use is waste. Multiple use causes proper management to perpetuate the resource, hence, conservation.

In that light we hand the Select Committee on National Water Resources our statement. We speak for cattlemen, the forestry industry, mining, reclamation, woolgrowers, water and power, tourist and travel, and protection of timber through fire prevention.

Obviously, we are concerned with overall protection of water. There could be no greater folly where protection of western water resources is concerned than for any group or individual to argue for any exclusive use of water. Such assumption of water use neither protects nor increases the available supply. It

shuts out others who have a proper right in water, and in the long run it wastes more water than it saves. It curbs the growth of economic development everywhere.

What this group is concerned with stems from the fact that the growth in the Western and intermountain States demands multiple use of all resources found in the public domain, and of some resource areas subject to private extraction. We have too many people to deny any segment ready access to its share of the natural resources of the country, either by actual extraction or—to the other extreme—enjoyment by being among them, such as hunting in the forests and fishing in the streams. The cattlemen must be able to graze their animals, the sheepmen must have lands to use, the loggers must have trees to harvest, and the hunters should be able to hunt in the wild areas, and all these activities can take place in the same ground by judicious sharing and previous arrangement. This is multiple use. The timbermen must protect the watershed in order to assure continuous growth, and when they do that they automatically engage in multiple use of resources with anyone else who uses water.

Idaho's industry, like that in other States, has been doing a lot to help insure that continuous growth. More than 670 owners of certified tree farms comprising 1 million acres in Idaho have dedicated their holdings, large and small, to long-term forest management. Most of these holdings lie within the cooperative timber protective association boundaries. These Idaho associations have provided portection from fire, insects, and disease more than 50 years, with equal interest in Federal, State and private ownerships. Incidentally forest wardens, whether Federal administrators or managers of cooperative agencies, are appointed by the State cooperative board of forestry, and all have an equal interest in resource development.

IDAHO WATER PROBLEMS

The Idaho Resource Development Council cannot come before you and speak concerning individual water problems. But it can tell the gentlemen of the select committee that appraisal of the Western water supply with an eye to all the users, now and potential, would probably be the greatest service this select committee could offer the Congress.

Right now, we in Idaho, and generally in the West, have plenty of water. Most of Idaho's waters drain into the Pacific Northwest. Speaking of Idaho, because that's where the committee is at the moment, Idaho does not trouble herself over water. True, there are the natural fluctuations of the times in agrarian water. Our dams store more or less as the seasons provide. But in the entire picture, Idaho has plenty of water.

The future, and a growing population, will bring greater demands in Idaho for water. Industry, although slow to locate in this State as we know heavy industry, will need more because there will be more industry. The addition of water users quite naturally causes wonder over where the additional water is going to come from.

The answer is in multiple use. There may not be more water naturally deposited. But there must be a continuous sharing of this basic resource and the conserving of it with acknowledgment of the rights of all needing water to have beneficial use of it.

Sixty-five percent of Idaho lands are publicly owned and there is a public responsibility to maintain and administer them for multiple use and conservation to protect Idaho industry, agriculture, wildlife, and recreation. In this protection it appears necessary to us that codes covering administrative principles should be established that will reduce arbitrary regulation to a minimum. Cooperative advisory boards, once used in our Idaho forests, should be reestablished for these forests.

Recreational boating has developed twentyfold in Idaho during the past 10 years. Each new reclamation, flood control or power project brings with it potential boating, water skiing, and fishing possibilities for Idaho citizens. However, we feel that the condemnation and purchase of private lands for Federal water projects should not include those lands lying above normal water levels. It is our recommendation that legislation designed to control these water areas for boating, skiing, and fishing shall be enacted and enforced by the State and not the Federal Government.

Federal controls certainly are not an answer to any problem concerning water and water distribution. Conflict of interests results from attempts at Federal control of a natural resource for purposes of apportionment. The States wherein the waters rise are the best custodians of that water for use within their respective boundaries.

We want to point out that mining activity has been curtailed in Idaho through foreign imports. However, provision in water studies should be made for sudden emergency development of this important industrial activity. The Federal Bureau of Mines made a careful study of the pegmatite deposits of rare earths which occur in the Boise Basin, in Bear Valley, Long Valley, and in the Warren mining district. These reports are in the hands of the appropriate Government agency. The recovery of these rare earths is by dredging.

Antimony, cobalt, manganese, tungsten, etc., as well as gold and silver properties now lie idle. When again active, provision for industrial water is needed to cool mining machinery and beneficiate the needed materials.

All agencies, private and public; all industries, and all special interests such as fish and game associations, must realize and we hope this select committee will point out, that there no longer can be proprietary control over water as a natural resource. Its application to the land for agrarian purposes remains paramount, but thereafter each person with an interest in a waterborne or water-freshened area of activity must control his endeavors so that the share of his neighbor is not usurped.

So also must be governed the productive care of water. Those doing work within a watershed, must seek to recreate that watershed or leave the ground so that its storage capacity is not harmed or that in the long run there is no diminishing of the orderly repletion of streamflow. That is only one example of the concept of multiple use, but see what it means. The restored watershed continues to provide the moisture for agriculture, for fisheries, for river commerce, for other industry, for power generation. It nourishes the forests themselves and the hunters and sportsmen, and those who just want to enjoy the beauties of the wilderness, find prosperous exercise of their hobbies.

We want to point out to this committee that the entire question of use of water as a national resource rests, in our opinion, entirely in the willingness of users and Government to promote multiple use. We can no longer afford the luxury of single-use forests and lands, and we cannot afford the luxury of single-use waters either. That is why we as an association representing eight segments of water users or industries to whom water is vital come to you as a unit with this statement. Our very appearance in this cause is an example of multiple use.

Senator DWORSHAK. Mr. Chairman, requests have also been received to submit written statements for the record by the following: Alvin Benson, U.S. Department of Reclamation, Weyerhaeuser Timber Co., Tacoma, Wash., Idaho AFL–CIO, Idaho Wool Growers Association, Idaho Cattlemen's Association, Tom Lyda, Earl D. Bonham, John M. George, Idaho Director, National Rural Electric Cooperative Association, and the Committee of Nine.

I ask permission those statements be made a part of the record.

The CHAIRMAN. Those statements will be submitted to you or Senator Church and will be included in the record.

Senator DWORSHAK. Mr. Chairman, so far as I am concerned I have no other witnesses.

The CHAIRMAN. Well, Senator Dworshak and Senator Church, for the committee I wish to express our deep appreciation to both of you and the kind people of your State who have provided us with the information contained in these statements and in these discussions.

We are very grateful to each one of you for the contribution you have made to this hearing.

I want to say that one of the great pleasures that I have in the U.S. Senate is serving with your two Senators from Idaho.

Idaho has much in common with Oklahoma. Most of the people I find here, as is the case in Oklahoma, are against any combine they are not in on. And only by the development of information, pertinent

and convincing information, comprehensive information, and by the mobilization of manpower and womanpower of our respective areas, all with the common objective of building a better country, a better State, a better standard of living, will you, and we, your representatives, succeed.

We are very happy to be here with you and hope you are coming to Washington after you have secured the help and services of your own very able congressional delegation. If you have any of the trout or salmon which are samples of your magnetic, abundant life here, that you want to find either temporary or permanent quarters for, you will find our name in the directory.

(Whereupon, at 2:10 p.m., the committee recessed.)

(Subsequent to the close of the hearings, the following statements were received to be included in the record:)

STATEMENT OF ALVIN BENSON, OWYHEE COUNTY PLANNING COMMISSION

The Owyhee County, Idaho, Planning Commission being an organization created to work for the good of Owyhee County and its people, wish to be on record in these following items:

Within the boundaries of the county are many hundreds of square miles of the most fertile land in the West, lacking only water to make it productive.

Many streams within the county carry flood runoff into the Snake River adding to the burden of the lower Snake and Columbia.

Flash floods of a fairly uniform pattern erode our rangelands and silt the farmlands below.

We strongly urge the building of storage dams of every size, to fit the demands of terrain and rainfall, starting as high in the mountains as possible and extending to and including the Snake River.

We endorse the Guffey project, Bruneau River, Sinker Creek, Succor Creek and other small projects already outlined by the Bureau of Reclamation and by soil conservation districts.

We believe a number of flash flood control dams in grazing lands would repay their costs in lessened damage to highways and existing irrigation structures and canals; in giving a wider use to these semiarid lands by the utilization of these ponds by domestic animals and wildlife and a greater area for the hunter and recreationist.

The manner of saving water in Owyhee County, Idaho is the key to our future economic development. The expense of saving water today must be measured in terms of the value of that water 10, 20, or more years in the future as population expands.

In explanation of the terms "flood water", we mean any waters above the normal, usable rate of flow of the stream, whether these waters create special problems or are lost to beneficial use.

Off stream, flash floods, generally occur in low rainfall, sparsely vegetated areas, and one or two such cloudbursts may contain the major part of a years water. Also these storms are usually in the summer when their storage would be doubly beneficial.

We feel that future legislative programs designed to protect and use our water should be closely coordinate with local governing bodies as Reclamation Districts or Soil Conservation Districts; so each project may be carried out to fit local conditions and still contribute to the overall national need.

STATEMENT OF H. T. NELSON, REGIONAL DIRECTOR, REGION 1, U.S. BUREAU OF RECLAMATION, ON FUTURE IRRIGATION DEVELOPMENT POSSIBILITIES IN IDAHO

Idaho is among the finest agricultural areas in the United States. Large parts of the irrigated lands in the Snake Plain in eastern, south-central, and southwestern Idaho are ranked by the Department of Agriculture in the top fifth of the agricultural area of the Nation for level of family living enjoyed by the farmers.

Most of Idaho's irrigation is in the Snake Basin. In that part of the basin served by surface diversions above Milner Dam, there are about 1,374,000 acres now irrigated by surface waters, and 477,000 acres served by underground pumping. This total includes those lands served from the streams which enter the Snake Plain from the north but do not reach the river. From Milner downstream, to and including the Weiser Basin, it is estimated that there are 742,000 acres irrigated from surface water of the Snake River and tributaries, 107,000 acres from ground water, and 108,000 acres from nontributary streams. Below Weiser, there is little irrigation that is significant in Idaho except in the vicinity of Lewiston, where 4,500 acres are irrigated. There are some 106,500 acres irrigated in the Salmon River Basin.

In north Idaho, it is estimated that there are about 15,000 acres under irrigation, and the Bear River drainage includes about 143,000 irrigated acres. Total irrigation for the State is estimated to be about 2,900,000 acres.

There are 11,145,000 acre-feet of storage on the rivers and streams of Idaho. Of this total, about 7,500,000 acre-feet are in the Snake River Basin, and about 6,685,000 acre-feet of this Snake storage is active.

Powerplants have been provided over the years to meet growing power needs of the area. In the State, there are 33 plants with a total installed capacity of 1,138,000 kilowatts. Twenty-seven of the powerplants, with a total installed capacity of about 932,000 kilowatts, including Brownlee, are non-Federal.

There are many important water uses for domestic, municipal, industrial, fish and wildlife, recreation, and similar purposes. Many of the present water-control facilities are multiple purpose in character, serving the principal functions of irrigation, power, flood control, and a variety of other beneficial functions.

The division of the waters of the Snake River between the States of Idaho and Wyoming are covered by a compact, the development of which was an important forward step. A compact between the Columbia Basin States is needed, and it is noteworthy that this is being actively worked on by representatives of the States involved.

There are many irrigated areas which now suffer from a lack of a full irrigation water supply. It is estimated that there are at least 905,000 acres in the Snake River Basin, including the nonsurface tributaries on the north, that have need for supplemental water in varying degree and at different times. Some 37 individual areas are involved in this total. This total is not represented as being complete, but it is included to define the scope of requirements. Undoubtedly there are individual operators using both ground and surface waters which at times have supplemental water requirements not included.

The history of power requirements has been one of steadily increasing load. Climbing domestic loads, rural electrification, power for seasonal irrigation water pumping from both surface and underground, and commercial expansion have, over the years, combined into a great increase in power requirements in the State. The Federal Power Commission and private utility projections are for continued load expansion. Federal Power Commission load growth projections show that by 1980, additional power of about 2,343,000 kilowatts will be required in the Snake Basin. Under this circumstance, hydroelectric power development potential cannot be overlooked in planning to meet the greater power needs of the future. It would seem that hydroelectric development must go forward at least until the alternative costs for thermal generation are reached.

Some areas of Idaho, particularly in the Payette, Kootenai, Little Salmon, Weiser, Teton Basins, and along the Snake River near the mouth of Henrys Fork, are subject to severe flooding. Municipal and industrial water needs are climbing as the cities grow and new commercial activity becomes established. There is tremendous interest in water-associated sports. The pressures on our fish and widlife that depend on surface waters and watersheds for habitat are at an alltime high and increasing. Increasing urban populations have made pollution control and provision of safe domestic water supplies a problem of great importance to many communities.

Needs for further water-resource development are fairly clear, and perhaps logical means of satisfying them from a physical viewpoint can be devised. There are, however, important problems of an economic nature, in the relationships between proposed and established water uses, and conflicts between present water uses which must be resolved before future developments of significance can go forward. The topographic and geographic relation of unirrigated lands

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to unused water supplies is such that required facilities are comparatively difficult and expensive to construct and operate. In short, all of the simple and less costly projects have been built, so future work will be difficult and expensive.

In parts of the basin, such as the area served by surface diversion above Milner Dam, all of the surface water is completely appropriated for long periods of historical dry cycles. This is illustrated by the accompanying bar graph showing adjusted historical spills at Milner Dam under the condition of a storage system as it now exists. The use of ground waters as a dry-year water supply for new development in such a situation is a promising possibility, but it will involve complex exchange arrangements. In almost every case, further beneficial use of water involves adjustments in the established pattern of use with water exchanges and replacement supplies. The utmost in understanding, cooperation, and working harmony will be required among all concerned if such arrangements are to become effective on a practical and workable basis.

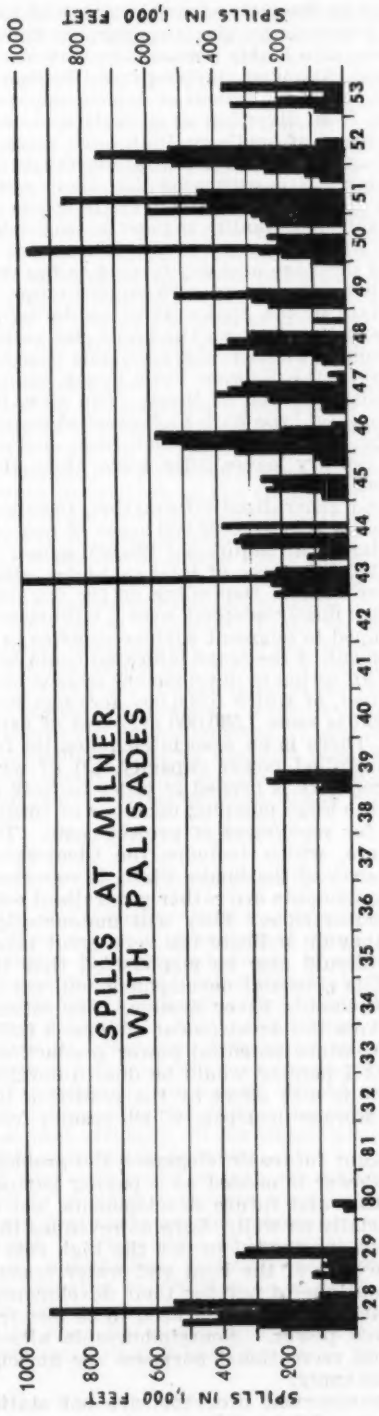
Storage is the key element in regulating the waters of the Snake and other rivers of the State which are largely of snowmelt origin. In the Snake Basin, there are a few remaining major storage sites, and their preservation for this purpose and development to their practical limit is a fundamental need if full comprehensive use of the water resources is to be realized.

In four major rivers crossing Idaho—the Snake, Kootenai, Spokane, and Pend Oreille—almost 69 million acre-feet of water leaves the State annually. The Snake River, the principal stream having a future development potential for irrigation, has an annual average discharge of over 33 million acre-feet at Clarkston.

The historical flow of Snake River, adjusted to reflect the present stage of development, averages 1,004,000 acre-feet annually at Moran, Wyo. The average flow under the same conditions at Weiser, Idaho, where the river leaves the broad plain of the Snake to enter a deep canyon, is 11,700,000 acre-feet. Between these two points, there are wide variations in runoff. The flow of the river in below-normal years is largely stored and diverted above Milner Dam for irrigation uses. It is this circumstance that leads to the long period of no spills at Milner Dam during a dry cycle such as occurred following 1931 when spills occurred only once. Adjusted average annual spills past Milner Dam average 1,130,000 acre-feet, and the maximum annual amount is 3,385,000 acre-feet. Below Milner, return flows from irrigation and the outflow of a large number of springs enter the Snake River to largely make up the flow measured at King Hill during the irrigation season. Average runoff of the river at King Hill is estimated at 6,700,000 acre-feet. The inflow from the Bruneau, Owyhee, Boise, Payette, Malheur, and Weiser Rivers, together with lesser tributaries, combine to make the total average flow at Weiser.

The water-resource picture in the Snake Basin is generally one of complete surface water utilization in dry periods above Milner Dam, with quick recovery from inflows below Milner Dam. There is a sizable usable water supply in the river that increases progressively downstream from Milner Dam. In dry periods, this supply is made up almost entirely from inflows below Milner.

Another water resource of great importance to the future development of agricultural Idaho is underground water. There is the Rathdrum Prairie aquifer in the north, which yields about 1,000 cubic feet per second. In addition, that part of the Snake River Plain, principally on the north side of the river, from the upper topographic limits of the plain down to the Thousand Springs area near Bliss, Idaho, includes a ground water resource of amazing potential. The foothills on the north are a boundary, and on the south, it would be the presently undefined limit of the ground water reservoir under the plain, which in certain areas may extend beneath the Snake River to the south. This Snake River Plain comprises a tremendous hydraulic system in which aquifers of the Snake River basalts and interbedded sediments serve both as a vast storage reservoir and as a ground water conduit. Transmissibilities are high, and the virtually evaporating-free storage capacity is tremendous. The plain itself is about 250 miles long, 60 to 70 miles wide, and includes some 13,000 square miles. Tributary valleys contiguous to the plain furnished the principal recharge to the aquifers which also receive substantial water contributions from percolating irrigation applications. Considered in its entirety, it is a reservoir which involved no dislocations from which several million acre-feet of water could be withdrawn by pumping with lifts that range from comparatively few feet to several hundreds of feet.


SPILLS AT MILNER
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Studies are now underway to determine feasible means of artificially recharging this vast underground reservoir by diverting surplus flows from the Snake River during the flood season into highly permeable areas of raw volcanics. In this manner, drawdown from expanded pumping could be decreased, the flow of the river could be smoothed out to the benefit of downstream power, and a measure of flood control realized from diversion of springtime flow peaks.

Although the water resources of southern Idaho are great, the undeveloped land resources that have a high irrigation potential insofar as land quality alone is concerned are even greater. It is estimated that there are almost 5,800,000 acres of arable lands in the basin, most of which are in southern Idaho. Arable lands are unirrigated with sufficient quality to meet at least minimum standards for irrigation development without regard to possible means of serving them. Some 1 million acres of this total are now dry-farmed to the extent that natural precipitation and accumulated soil moisture will support crops. The bulk of this total occurs on the great plain of the Snake River bordering present limits of irrigation on the north side of the river, on the broad flat valleys of Raft River and Goose Creek, on the Bruneau Plateau which extends from the headwaters of the Owyhee River easterly to the Salmon Falls Creek drainage, and on the Mountain Home Plateau south and east of Boise. The soils, for the most part, are the fine-textured, deep, loessal type with high mineral fertility and excellent water-holding capacity. The abundant production from sustained irrigation of identical lands over half a century leaves little doubt about the high capability of such soils under irrigation.

From very preliminary and generalized information, it appears that it might eventually be possible to develop up to 1,092,000 acres of new lands and provide supplemental irrigation water to an additional 905,000 acres. Total new benefits would then apply to 1,997,000 acres of land in Idaho, almost all of which would be in the Snake River Basin. Depending on the amount of storage and the operating criteria that are finally adopted, over 2 million acre-feet of ground water would need to be pumped to augment surface supplies of the upper Snake River in order that development of the scope indicated could be realized. To do this job would also involve an ultimate development of new storage capacity of the order of 7,263,000 acre-feet, of which 5,306,000 acre-feet would be in Idaho.

Included in this Idaho total is some 1,530,000 acre-feet of exclusive and joint-use flood control capacity. There is an associated potential for developing up to 1 million kilowatts of installed power capacity, all of which is in Snake Basin above Weiser. This capacity is needed in order to fully utilize the water resource, provide power for the large pumping demands of future irrigation, and to be a source of revenues for repayment of project costs. The future hydropower potential of the State, which includes the Clearwater, Snake below Weiser, and other streams north of the Snake Plain, is considerably greater.

It is emphasized that these amounts are rather generalized estimates of future potentials over a long period of time. They will undoubtedly be changed as refinements are made, but they do indicate the very great potential for future development in Idaho. It should also be emphasized that the depletions in streamflow resulting from this potential development will not materially affect the power potential of the Columbia River System. The estimated total effect of the depletions resulting from the development of some 8 million acres in the Columbia River Basin is to reduce potential power production by less than 6 percent, of which only about 1 percent would be due to development in Idaho. This depletion of streamflow is also offset by the reduction in the overall requirement for flood control storage upstream which results from the irrigation development.

In order to achieve significant future development, the problems of repayment must be fully recognized. Power is needed as a paying partner. It would be necessary to integrate existing and future developments, not only electrically and hydraulically, but financially as well. Surplus revenues that accrue in the future from existing projects are needed to pay the high cost of the facilities required to use the now-idle part of the land and water resources. As in the past, the irrigators would continue to pay for their developments to the extent they are able. Costs beyond this level would need to be met from another revenue source, principally from power. Nonreimbursable allocations for flood control, fish and wildlife, and recreational purposes are anticipated under the existing laws and policies that apply.

Idaho's water resource development programs are not static. The Federal North Side pumping division and Michaud Flats irrigation projects, now in final

stages of construction, will add about 91,000 acres. The Little Wood River Reservoir enlargement is under construction and will be finished soon. The Palisades Dam, Reservoir of 1,400,000 acre-feet, and powerplant of 114,000 kilowatts, have just finished the first full year of operation.

The Burns Creek Dam, Reservoir, and powerplant in eastern Idaho would make a substantial contribution to the Palisades project through reregulation of peak power releases, provision of 90,000 kilowatts additional generating facilities, and 100,000 acre-feet of irrigation space. It is now under consideration by the Congress. The Mann Creek project, involving supplemental supply to 4,465 acres and 595 acres of new land in Washington County, has been introduced for legislative action. These two developments would be beneficial additions to the water resource utilization facilities of Idaho.

An investigation and report has been completed on the Garden Valley division of the Snake River project. This project has a very favorable ratio of benefits to costs and would add a total of 2,400,000 acre-feet of storage on the Payette River. Storage in Garden Valley Reservoir would be used for the irrigation of about 38,000 acres in the lower Payette Basin, and on the divide between Boise and Payette Rivers. In addition, the reservoir would have the capability of serving as an irrigation water supply source for lands far beyond this amount. Ultimately, 368,500 kilowatts of installed capacity would be provided in four separate plants. Important downstream power and flood control benefits would also accrue to the Garden Valley development.

A report is nearing completion on the Guffey unit, Mountain Home Division, Snake River project. This involves a plan to irrigate some 119,140 new acres and provide a replacement or a supplemental supply to 12,460 acres of lands in the Mountain Home Division of the Snake River project south of Boise. Development of the Guffey unit would add over 1,200 new farms to the area, and an estimated gross annual farm product of up to $15 million.

Long-range possibilities in southwest Idaho include the eventual expansion of the Mountain Home development. The expansion would include up to 82,000 acres southwest of Boise above the New York Canal as far south as the Swan Falls area above Snake River. Water supplies for this area have been identified in the Snake and nearby tributaries. Another development for the years to come is the irrigation of the Bruneau desert. There are up to 225,000 acres which could be served by combining water supplies from Snake and Bruneau Rivers. These two projects would not be simple nor inexpensive, but their eventual development would add an irrigated area about the size of the present Boise Valley development.

STATEMENT BY WEYERHAEUSER CO., TACOMA, WASH.

Weyerhaeuser Co., has a dual interest in the committee's stand on the Nation's water problems. We are both a large user of water and a large owner of forest land, which constitutes the principal source of supply for the water needs of our region. Our forest lands are located principally in Oregon and Washington, most of them being in the Douglas-fir region west of the Cascades.

Our uses of water are many. While the largest use is for process water in our pulp and paper mills, other uses include domestic supply, transportation and storage of logs, transportation of other raw materials and finished products, and waste dilution. Our mills in Oregon and Washington use and reuse approximately 200 million gallons of water daily. However, this use is almost entirely non-consumptive so that virtually all the water, which is discharged after being cleaned and screened, is available for reuse.

As an owner of land that produces both wood and water, we are acutely conscious of the need to manage our lands to maximize the production of both. While we are aware that there are real shortages of water existing and anticipated in a few areas in other parts of the country, we are encouraged by the findings of such an outstanding authority as Prof. Gilbert F. White of the University of Chicago that the Nation as a whole "has enough water to go around for a long time to come." We also note that his confidence as to the future is predicated upon the assumption that the Nation, "will take prudent steps to make better use of what it has." [1]

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[1] 36 Harvard Business Review, p. 87.

To the best of our knowledge, none of the dire predictions about water shortages have extended to the Douglas-fir region, in which most of our lands are located. We emphasize these regional differences because it is obvious that water development projects that may be necessary and appropriate in some regions would be unnecessary and uneconomic in others. Consequently, any attempt to establish uniform nationwide standards would probably do more harm than good.

We note that the committee is seeking answers to eight specific questions. In connection with the first three, relating to future water development needs, it appears that our water needs are primarily a function of rising living standards and population growth and the related agricultural and industrial development. Industrial expansion will, of course, impose increasing waste disposal demands on our water, thus increasing the importance of assured minimum streamflows. However, the amount of process water required by industry is extremely responsive to the price of water, with almost unlimited opportunities to reduce water consumption through modification of industrial processes.

Demands for wood, the other basic product of our lands, will likewise increase as a result of population growth. Because wood is a consumer goods, rising living standards will increase the demand for wood more rapidly than the rate of population increase. While there are opportunities to utilize more fully the wood grown on our lands, these opportunities are relatively limited, when compared to the opportunities to reduce water use. Consequently, expected increases in the demand for water are likely to be far exceeded by increases in the demand for wood.

There is general agreement that by the year 2000 the supply of saw timber available on lands presently dedicated to timber growing will be extremely tight. The U.S. Forest Service paints a particularly gloomy picture. In its study, "Timber Resources for America's Future," the Forest Service has projected timber growth and wood demand to the year 2000. Recognizing the hazards of such long-term projections, the Forest Service made high, medium, and low estimates of demands in the year 2000. It concluded that "if medium levels of timber demand are met each year, saw timber growth by 1975 would show a 14 percent deficit in relation to needed growth and a 76 percent deficit by the year 2000." [2]

This stark prediction emphasizes the necessity of designing water projects so as to minimize the amount of land that is taken out of timber production. It likewise compels multiple land use. The compatibility of timber harvesting operations and watershed protection has been adequately demonstrated in many of our northwest watersheds. For more than half a century the city of Seattle has relied upon the Cedar River watershed for its domestic water supply. During all that period logging has been conducted in the watershed. In this well-managed watershed, the cutting of timber on a sustained yield basis has not interfered with either maximum water production or optimum water quality. The city of Seattle is now completing a domestic water supply project in the Tolt River watershed where our company, as the major landowner, will continue to manage and harvest trees. With similar success we are growing and harvesting trees in watersheds serving Tacoma, Aberdeen, Centralia, Eugene and other cities in Oregon and Washington. The effect of timber cutting on water for streamflow has been the subject of several studies. On the basis of one of the most detailed studies, it was concluded "that the amount of water available for streamflow may be substantially increased by carefully managed timber cutting." [3]

We do not feel that we are particularly qualified to address ourselves to the level of cost and expenditures that is justified for future water development. However, as the owner of land that is directly affected by many water developments, we feel qualified to point out some of the cost factors that are frequently overlooked in considering water projects.

The loss of land flooded by reservoirs is obvious to everyone. The implications of this loss, however, are not as apparent. Reservoir lands are usually in valley bottoms, having a tree growing capacity far in excess of the average for the region. The accessibility of this timber means that its value is in excess of the average value. An equally important aspect of this accessibility is that the

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[2] U.S. Department of Agriculture, Forest Service Research Report No. 14, p. 96 (1958).
[3] U.S. Department of Agriculture, Technical Bulletin No. 968 (1948), p. 37.

timber on these lands was cut many years ago, so that the second crop will be reaching maturity in the next 15 to 20 years, thus producing a balance of age classes that is important for continuous mill operations.

Every reservoir requires that existing logging roads be replaced by new roads constructed in higher and more difficult terrain. Thus, they cost more to build. In addition, the longer hauls, poor alinement, and increased adverse grades on these replacement roads substantially increase logging transportation costs. Because the value of timber equals log values less costs of logging, these increased costs materially reduce the value of timber. Water projects have other less direct but just as costly effects.

The forest industry has a tremendous investment in plants. This investment, and the employment provided by these plants, requires an adequate supply of raw materials. Today the milling capacity in the Northwest far exceeds the available supply of timber. Consequently, every acre taken out of timber production inevitably reduces the level of employment in our industry, and reduces the value of the plant investment dependent upon adequate timber supply. This reduction in value will have to be absorbed by either the timber owners, the consumers of wood products, or the consumers of water or waterpower. So far as private timber owners are concerned, this is an element of severance damage for which the owner is entitled to be compensated. However, the majority of the saw timber in the Douglas fir region is owned by the Federal Government, which may also be expected to be the major water developer in this region. Consequently, a choice must be made between passing these costs on to the consumer of forest products or to the consumer of water or waterpower. Since it is for the benefit of the latter that these projects are being developed, it seems only fair to require them to absorb these costs. Moreover, every acre taken out of production will increase the deficiencies of timber supply predicted by the Forest Service. As a consequence, water developments will inevitably result in losses which cannot be compensated for in money.

In conclusion, we applaud the foresight evidenced by the Senate in examining the water problem at a stage that is early enough—at least so far as the Northwest is concerned—to permit reasoned and logical solutions. It will take time to develop solutions that will properly recognize the many interrelated elements of the problem. Meanwhile, mounting population pressures, not only on our water resources, but upon all other natural resources, are compelling all of us who rely upon our natural resources to recognize the legitimate claims of others. These pressures have emphasized that multiple-use management is a necessity rather than a luxury.

STATEMENT BY DARRELL H. DORMAN, PRESIDENT, IDAHO STATE AFL–CIO

On behalf of the Idaho State AFL–CIO, I would like to submit the following brief as to labor's stand on water resources.

Labor in Idaho has always advocated that our rivers be fully developed to make better use of the waters that originate and flow through the State of Idaho. Labor's stand in the past has always been for full development of all river resources as to the manufacturing of power, flood control and navigation.

In view of the great water shortage that is now apparent on the American scene, it is labor's belief that a full and complete study of all rivers should be made and steps taken immediately to develop the storage and power sites to their fullest use.

In years past, labor has passed numerous resolutions for the full development of the middle Snake, and at our last convention, we passed resolutions that favored the building of the Burns Creek Dam as proposed and also for the building of the Bruces Eddy Dam on the Clearwater River. In years gone by, we have also passed resolutions favoring the Mountain Home project and the Guffey project. I know that these are small projects, but we believe that they are required projects for the overall development of the river resources of the State of Idaho.

The Burns Creek Dam would add an additional 100,000 acre-feet of water storage to the upper Snake River Basin where the need for this storage is apparent at the present time. The Bureau of Reclamation has made commitments which would use this water immediately if the project were built. This dam has been opposed by the private power interests on the basis that they will build steamplants in the near future and be able to produce power at a much higher rate, and so by this means make power available to the area to alleviate the shortage.

Idaho has large phosphate deposits in eastern Idaho which would be developed in the near future if a source of cheap electric power were available but under the present high prices for power, capital finds it nonprofitable to proceed with any new developments in this section of Idaho. It is our thinking that the Mountain Home project is a must project in the very near future.

If you have studied the population trends in the United States for the past 15 years, you will note that in spite of our present overproduction that in a few years' time we will have underproduction on our farms, so it is our belief that this project should be given early consideration, as in the very near future we will be needing the produce from this land to feed the population. It will take several years to develop this project, so I would like to urge an early approval thereof.

When I stated that labor was in favor of full development, we did not mean a piecemeal partial development by private enterprise, such as run of the river dams.

Labor feels that the rivers of the United States are the property of the citizens of the United States and should be developed by the United States to their fullest, so that all may benefit therefrom.

STATEMENT BY WILBUR F. WILSON, PRESIDENT, IDAHO WOOL GROWERS ASSOCIATION

Use of resources to develop and maintain our economy have a valid place in any program for proper management. Water as one resource is most essential to so manage to be available.

To provide a sustained yield of our most valuable renewable resources, water, timber, and grass in a correlated management, all can be productive. The economy of our State is based on resources and recognized are the benefits which accrue from the prudent and wise use which is being made of them. Resource usage is closely tied together as one complements the other. Water is a product of land. Land in turn must be so managed as to produce water. They are interdependent.

Water is a product which when utilized produces crops, supports people, business, and industry. In turn grazing use of Federal lands, part of which may be on watersheds, can support livestock which utilizes farm feeds produced by water. Removal of deep rooted plants, trees and holding in check brush, is known to increase the value of a watershed. Removal of part of the annual growth of grass lessens the fire hazard and possible ultimate loss of valuable ground coverage so essential for watersheds which produce the lifeblood in support of our economy.

Conservation with use of resources has built our State. Any break in the chain of resource industries affects the other. Water is used to produce crops and crops must be used.

We appreciate the opportunity provided in setting out the economic importance of our resources.

STATEMENT OF LEON L. WEEKS, SECRETARY, IDAHO CATTLEMEN'S ASSOCIATION

Idaho cattlemen, representing over 1 million beef cattle in Idaho believe water is a resource which must be developed to maintain our economy. Water is a product which is essential in producing crops and in turn supporting people and industry.

Conservation of water and land is a basis of our wealth in Idaho and Idaho cattlemen are vitally interested in conservation of both. We not only depend on grazing on Federal lands, but also depend on feeds from farms which also depend on water. Water, grass, and crops depend on each other.

All lands must be managed in such a way as to produce the most amount of water. Ranges which are not used tend to make a fire hazard with possible loss of grasses and timber. Proper utilization of the watersheds through grazing will prevent this.

Without water, livestock, Idaho's largest single agricultural industry and a major nutritional element in our diet, would be nonexistent. Therefore, the reason our cattlemen are vitally interested in water conservation on both public and private lands.

We wish to thank you for this opportunity to make this statement.

STATEMENT BY T. C. BACON, PRESIDENT, IDAHO LIVESTOCK PRODUCTION CREDIT ASSOCIATION

The Idaho Livestock Production Credit Association was organized under the Farm Credit Act of 1933 and has a membership of more than 100 cattle and sheep operators and farmers. By the nature of their businesses they are all interested in water resources.

Idaho is primarily an agricultural State, and State control of water is essential to its economy.

In order to carry out a sound agricultural program and support the economy, most important to our State, we should have practical administration by Federal agencies of the public lands which comprise approximately 63 percent of the total land area of the State.

We appreciate having your Senate committee hold a hearing in the capital city of Idaho, and hope that this committee will continue to be interested in our water and public land matters.

NAMPA, IDAHO, *October 13, 1959.*

DEAR SENATOR: Not having my testimony in writing at the meeting on Tuesday, I deem it a duty to send it in so that it will go into your report. Pollution of water was discussed, also ways for keeping our water pure. Our game department, through higher authority of predatory animal controls, have been putting out 1080. This poison, 1080, has been put on our watersheds and it is one of the most deadly poisons known. A doctor's analysis of this 1080, states that it was 25 times as deadly poisonous as was strychnine. That this poison would kill birds and animals down to the 10th one that had eaten off of the first one, or first poisoned dead carcass. One game department employee stated at one of our meetings, that they, the game department got $40,000, for putting the poison out to control predatory animals, from the biological survey, and if they did not use the poison and spread it about, they would lose that $40,000.

The poison, 1080, should not be used in our watersheds or on any watershed in America, as it definitely pollutes the water and makes it unsafe to use.

Respectfully,

TOM LYDA.

NAMPA, IDAHO, *November 3, 1959.*

Senator ROBERT KERR,
Chairman, Select Committee on National Water Resources,
Washington, D.C.

DEAR SIR: This letter is written relative to your Boise, Idaho, hearing on October 13.

The creation of your Committee on National Water Resources in my humble opinion was a very farsighted and intelligent act. After assembling all the opinions and all the information which you shall have received from various groups representing all types of interests, a program of national water resources development can be formulated which will be good for our country and which will be equitable to all persons affected and not disturb adversely their economy.

It is upon these two phases, equity and economy, that I wish to comment.

The detailed account of the statements made in the October 13 Boise hearing were read by me as they were reported in the newspaper. I know personally many of these people making these statements; have worked with them in various ways for years. They are nice people. The strange thing, however, is that the one group who will be most affected by any action of your committee was not heard from. That group consists of the man whose sole income comes from the farm, the man who owns and operates his own land and that is a very important group.

Now—to the subject.

If the Mountain Home project is to be developed, the Guffey Dam comes into the picture and that means the exchange of water rights affecting directly a very large area of Ada and Canyon Counties and a very great number of people. I have talked to many landowners and operators in this area and have conducted meetings which they have attended and they are, to put it mildly, alarmed. They will have no part of an exchange where their present rights, gravity flow, are to be substituted by pumped water. They are not against

practical sensible reclamation. In fact, they worked hard to get the Anderson Dam and their present water rights. They are extremely happy with these rights. They contend the Guffey proposal is simply not equitable and I agree with them. For years they have worked hard fulfilling their contract with the Federal Government paying for their present rights and they expect the Federal Government to honor that contract.

In addition to water rights, the economic aspect is of very great importance. I believe there is much lack of understanding over the country concerning the economic effect of irrigation projects developed in different areas of the United States. For example, the development of the Mountain Home project could affect the economy quite differently from the development of another project in some other area. Basis for this conclusion comes from the fact that I grew up in Altus, Okla., owned land there for years and am in regular contact with my sister and her son who own and operate land there now. I have watched the irrigation project north of Altus develop; have been over it. They have a different problem there from what we have here because there, the two money crops are cotton and wheat. Cotton and wheat are large volume crops. In this area, climatically and geographically, we are situated so that our crop range is extremely small. We must raise crops that gross a lot of dollars per acre because we are handicapped by very high freight rates coupled with extremely high labor costs attached to producing such crops. A farmer here has to gross, conservatively speaking, $100 per acre before he receives any compensation for his own labor and interest on his capital investment. He could barely exist here raising wheat and corn. This means then, the raising of seed crops and climatically this area is excellent for that. But seed raising does not need many acres to supply the markets. Just a few surplus acres in the production of any one seed crop can have a disastrous effect on the price per pound one gets for that crop. An extreme case will illustrate my point. A friend of mine nearby raises parsnip seed. His production per acre is so great he can practically supply the world market in that seed with only a few acres of his farmland. A few more acres used in the production of that seed would flood the market. The point I am trying to make is that in this great Northwest, wherever a new reclamation project is created, it in turn can create almost immediately acute overproduction in a very limited field of agriculture so that, unless it is timed properly in its development, the economic well-being of a whole area can be seriously damaged.

It is my sincerest hope that your committee weigh this matter of timing in the development of new reclamation projects very seriously otherwise a great number of farmers all over the country, who are doing fairly well now economically, shall be injured, thus creating additional problems for the U.S. Department of Agriculture. No one knows better than you and the other distinguished members of your committee how complex this agriculture problem is. Disturbing one segment that is "in balance" can result in many serious unbalances. Land speculators are impatient. They had plenty of voice in your Boise hearing. I know some of them. They want quick results. We, who are the real producers, want caution. If and when there is real need for more land, put it into production. As it stands, the possibility will always be there. It will keep. Perhaps our children will need it. Why not leave them something to do? Perhaps 25 years from now there will be the need. That is a short time. We hear the argument about the loss of land from cities expanding, highways being developed, etc., but nothing about land coming into production right now through private enterprise. Our own county assessor's records show that during the last 10 years 25,000 acres of land have been put into outstanding production in this county alone. Nor do we hear about the farmers' continued ability, through the help of science, to produce more and more off the same number of acres of land.

Please weigh this all very seriously and thank you very much for your patience and consideration.

Yours very sincerely,

EARL D. BONHAM,
Chairman, Deer Flat Legume Seed Growers.

STATEMENT OF JOHN M. GEORGE, IDAHO DIRECTOR, NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

Mr. Chairman, gentlemen of the committee, my name is John M. George. My address is 1811 Prospect, Lewiston, Idaho. I am a member of the board of

directors of the Clearwater Power Co., of Lewiston, Idaho, which is an REA-financed rural electric system. I am also a member of the board of directors of the National Rural Electric Cooperative Association and a member of the executive committee of that board; and I served for 2 years as president of the National Rural Electric Cooperative Association.

The purpose of my statement to this committee is to reemphasize the interest of the rural electric systems of Idaho in a strong Federal water resource development program, and to impress upon the committee the economic indispensability of hydroelectric power generation to such a program.

During the year ending July 30, 1958, the rural electric systems in Idaho purcased some 138 million kilowatt-hours of wholesale energy for distribution for their consumers. Ten years ago, in 1948, we used only 25 million kilowatt-hours of wholesale electric energy. Over 97 percent of all Idaho farms now enjoy central station electric service.

This phenomenal growth of rural electrification in Idaho over the past 10 years is largely attributable to one factor—the actual availability of low-cost Federal wholesale power and its competitive effect on our wholesale power market. We prize very highly our rich heritage of water resources. We want them developed for the benefit of the people and without waste.

In the Western States, water-resource development goes hand in hand with land-resource development. In many areas the land is worthless unless artificially impounded water is available for irrigation. Under reclamation law the investment of the Federal Government in irrigation, dams, ditches, canals, and pipes must be repaid over a reasonable amortization period. But the farmers who purchase water from Federal irrigation projects cannot always afford to repay the full costs of the dams, canals, pipes, and ditches necessary to supply such water. This is where the rural electric systems help, because the revenue derived from the sale of Federal power to them is used to repay to the U.S. Treasury that part of the cost of irrigation works which the water users cannot afford. This has been true with respect to the Missouri River Basin project and the Central Valley project of California. It will most certainly be true with respect to the Colorado River storage project now in its initial stages of construction.

It seems abundantly clear, therefore, that development of large-scale water utilization programs must be accompanied by the development of major hydroelectric facilities to supply the necessary repayment potential.

The rural electric systems and other Pacific Northwest organizations interested in water resource development are understandably dismayed by the failure of the present administration to exercise initiative and imaginative planning in the field of water-resource utilization—especially in the Pacific Northwest. The present administration policy of partnership and procrastination has already permitted a substantial portion of the water resources of the Middle Snake River to be wasted by default. I refer, of course, to the *Hells Canyon* case, and to the abandonment by the administration of recognized principles of comprehensive river-basin development in allowing the Idaho Power Co. to build a project less related to full use of the waters of the Snake River than to the special interests of the company.

The *Hells Canyon* case is for all practicable purposes a closed book. We do not wish to waste the time of this committee by beating on dead horses or by stirring the cooling brands of past animosities. But we do wish to impress upon the committee the unalterable opposition of our people to any repeat performance of the Hells Canyon debacle. And we wish the committee to be advised that we have already taken the initial steps to oppose what we believe to be such a repetition.

The Pacific Northwest Power Co., a wholly owned subsidiary of four investor owned electric utility companies, has filed an application with the Federal Power Commission for a license to build the High Mountain Sheep Dam and Reservoir just above the confluence of the Salmon and Snake Rivers.

The rural electric systems of the Pacific Northwest, as well as labor and farm groups interested in comprehensive multiple purpose river basin resource development, are opposed to the licensing of the Mountain Sheep project by the Federal Power Commission, and are opposed to the recommendations by the Corps of Engineers that construction of two projects, Mountain Sheep on the Snake and Lower Canyon on the Salmon, each only a few hundred yards from the other, be substituted for a single, less expensive, and more economic structure which has traditionally been recognized as the best way to develop this stretch of the river. That single project is Nez Perce.

Our people, however, recognize the existence of a very serious migratory fish problem in this reach of the river and have, therefore, foregone recommendation of the Nez Perce project at this time, and have instead asked that development of this portion of the Snake River be held in abeyance or frozen during a period sufficient to devise means and methods of solving the migratory fish problem. Now comes the Pacific Northwest Power Co.'s attempt to preempt this part of the river as Idaho Power Co. did at Hells Canyon.

It is not desirable to build a high dam which will block the salmon runs on the Salmon River at the present time.

So the Pacific Northwest Power Co. proposes the Mountain Sheep Reservoir to be located just above the confluence of the Salmon and the Snake. This project would, of course, not in itself interfere with the fish runs on the Salmon River. But neither would it develop the full potential of the site. The company is in effect saying, "Let us build the Mountain Sheep project now to partially develop the Snake River below Hells Canyon, and later the Federal Government or someone else can build the Lower Canyon project on the Salmon River at a point just before it joins the Snake. This is an illusory prospect indeed because just as certainly as the Nez Perce project which we favor would interfere with the spawning of fish on the Salmon River, so also would any other project including Lower Canyon.

The company is attempting to flimflam the people of the Pacific Northwest with respect to the Nez Perce-Mountain Sheep controversy to an even greater extent than was done with respect to the Hells Canyon controversy. It is pushing for wasteful partial development of the site now with the illusory prospect of perhaps completing development with a second project later on.

The rural electric systems and other progressive resource development groups want full development of the site on the most economic basis and we also earnestly desire a speedy solution to the fish problem. But we don't think that any problems can be solved by wasteful resource development.

The two projects, Lower Canyon and Mountain Sheep, which the Pacific Northwest Power Co. and the Corps of Engineers contemplate would cost 50 percent more than the Nez Perce development, would result in a lower benefit to cost ratio and would develop higher cost energy than would Nez Perce.

We urge the committee that in any consideration of water resource development projects in the Northwest, full consideration be given to preventing any recurrence of the wasteful policy indulged in by the administration during the Hells Canyon activity.

STATEMENT SUBMITTED BY LEONARD GRAHAM, CHAIRMAN OF THE COMMITTEE OF NINE, OF WATER DISTRICT NO. 36

Gentlemen of the committee, the Burns Creek Reservoir project now pending before the Congress of the United States provides for optimum development of the waters of the Snake River at the Burns Creek site in southeastern Idaho. It is what we call an upstream water development project, as it is located in the headwaters of the great Snake River prior to any major diversions for irrigation. The proposed Burns Creek project operated in conjunction with the Palisades and Jackson Lake Reservoirs, which lie further upstream, provide not only much needed water for irrigation and flood-control benefits but also will permit a regulated flow of the Snake River and the release of water when needed so that it can be put to beneficial use on its way through Idaho, to the Columbia River.

Burns Creek is essentially a reclamation project. The reregulating operation will be coordinated with that of the Palisades project in order to permit peaking power at Palisades and at the same time maintain the even flow of the river during the winter months as well as during the summer. This will be of great benefit to the farmers who divert water for irrigation further downstream and will also prevent bank erosion and damage to diversion works due to ice jamming, etc.

Of the total 234,000 acre-feet of storage capacity in Burns Creek, 100,000 acre-feet will be set aside and used for supplemental storage of water for use on land now under irrigation. This 100,000 acre-feet of supplemental storage for irrigation could well mean the difference between a crop failure or no crop failure during a dry cycle, and therefore is invaluable to Idaho's farm economy. This space is now oversubscribed.

We do not view the proposed Burns Creek project as being essentially a power project when viewed in the light of the overall aspects of both the Burns Creek and Palisades projects. The need for Burns Creek was urged at the time of the Palisades authorization and actually should have been authorized as a part of the Palisades project. Power development in conjunction with reclamation projects has long been an accepted practice and, in fact, were it not for the power aspect of Palisades and Burns Creek, these two projects would probably never have materialized because the costs of the reclamation features of the projects would be beyond the ability of the water users to repay.

The pending legislation if enacted into law would authorize Burns Creek as a reclamation project under the Reclamation Act of 1902 as amended, which act respects and honors State water law, and it is quite different from an authorization of a power project under a license issued by the Federal Power Commission.

Burns Creek project as now proposed will provide excellent recreational facilities, fish and wildlife benefits, and will also provide some flood-control benefits because of the 234,000 acre-feet of storage capacity and the permitting of an even control and regulation of the flow of the river.

The Committee of Nine at its annual meeting in Idaho Falls on June 6, 1959, adopted a resolution favoring the enactment of the pending Burns Creek legislation and requesting the members of the Idaho congressional delegation to give the pending legislation their full support. The water users of Water District No. 36 of the State of Idaho at their last two annual meetings also unanimously approved and urged the construction of the Burns Creek project.

We respectfully urge that your committee go on record as favoring the construction of the Burns Creek project as proposed in legislation passed by the U.S. Senate and now pending in the House.

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